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"MADE IN GERMANY."

BY "AZYGOS."

THIS is not, as its title might lead one to think, an article on children's toys, Lager beer, or even military organisation, but to the vast majority of the German population a far more important factor in promoting the advancement, physical and otherwise, of the inhabitants of the Fatherland, viz., the methods by which the homely pig is converted into nourishment for the sustenance of the German race.

The pig-killing or "Schlachterfest" (literally "slaughter-feast"), is looked upon by all country people as a far more exciting and important function than birth, death, marriage, or indeed any other domestic occurrence or ceremony, and it is an event to be looked forward to for weeks beforehand, and talked of for weeks after by certainly all the peasant portion of the population, and even in the better-to-do classes the "Schlachterfest" is by no means thought lightly of. The sausage is to the German what beef is to John Bull, and it is indeed about the only kind of meat ever tasted by the poorer classes in the country, and its varieties are fearful and wonderful to the outsider and uninitiated; *absolutely nothing* remaining of poor piggy on the evening of his decease but the eyes, gall-bladder and tail, and where twelve hours previously he had revelled in all the pride of fattened pighood, there are now to be seen only the above-mentioned sad relics, whilst in the Hausfrau's store-room are hanging rows upon rows of sausages, black and brown, and pink and white, and raw and cooked, encased in various parts of his internal economy, whilst legs and sides and hams are reposing in a barrel embalmed in salt and spices preparatory to becoming bacon and ham and pickled pork; the superfluous adipose tissue

being melted down into jars and pots for cooking and eating purposes; in fact it is used simply spread upon bread instead of butter.

The most usual breed of pig to be met with in Germany is a cross between our Berkshire or Yorkshire and the native long-nosed, long-legged, and unfastidious animal with hanging ears and long straight tail. On the large farms, however, pure-bred English pigs are now generally to be found, but the peasant prefers the above-named cross on account of their hardiness and readiness not only to eat a diet composed of everything and anything, but to fatten on it; the breed is known as the bastard pig.

One feature in the life of the peasant's pig is worthy of note, viz., the fact that all the summer and autumn he is regularly taken out and herded by an individual chosen for the purpose. The swine-herd is subscribed for by all the pig-proprietors of the village, and he is, as a rule, even poorer than his neighbours, or else his trade is one that can still be pursued whilst herding his noisy and unruly charges, and the writer has seen the village tailor sitting in the midst of a herd of 50 or 60 pigs busily manufacturing or patching nether garments for his patrons! His daily routine is as follows:—At about mid-day he sets out to a well-known rendezvous in the village, accompanied by a couple of dogs and blowing lustily on an ancient and unmelodious horn, at whose well-known sounds every pig in the place trots forth from his own especial dung-heap to the place of meeting. As soon as they are all assembled the procession sets out with its varying accompaniment of pigs squealing and grunting, dogs barking and yapping, whip cracking, horn blowing, and excited peasant women running and shouting in the rear to bring up unruly stragglers who have not yet learnt to obey the sound of the "Assemble" call. They are taken to waste grass places, or in autumn to the stubble fields, where they grunt and grub to their hearts' content, unhindered by a ring in the nose (in fact, the writer has never seen a ringed pig in Germany), but, of course, being prevented from grazing on the crops which are unprotected by a fence or hedge of any sort; consequently, the swine-herd must keep a sharp look-out to restrict his charges to the waste places, where they can do no harm. Without his dogs, indeed, this would be a hopeless task, but between his own leathern-thonged whip and his dogs' teeth, discipline is maintained. At dusk he returns to the village, and walks down the main street with an ever-decreasing herd, as each pig turns off of his own

accord to his own home, until they have all disappeared, when his labours as swine-herd cease for the day. But to return to the subject of our article. In the grey of the early morning in winter—for it is early at this time of year that the pig-killing takes place, in order that the meat may keep—the poor victim is brought forth and stuck, the blood being caught in a large vessel, and quickly subjected to a medium temperature so that it shall not freeze, and the usual process of removing the bristles is gone through; then the internal organs are taken out and all carefully preserved with the above-mentioned exception of the gall-bladder. Small portions of flesh are cut from the muscles of the diaphragm, larynx, intercostal muscles, root of tongue, and the muscles of the eyeball, for examination by an appointed official inspector, to test the existence of trichina spiralis. The rules regarding this are very stringent, and the slightest deviation from the law is punished severely, the danger of death from trichinosis being, in Germany, far greater than it is with us on account of the large quantity of flesh which is consumed absolutely raw, and the still larger quantity which is only smoked, and, but for this mode of preservation, is eaten uncooked.

The "official inspector" is, as a rule, any peasant who is sufficiently ambitious or intelligent to go through the necessary instruction and examination, to obtain his diploma as inspector of trichinæ for the village; but any qualified veterinary surgeon, doctor, or chemist, is also competent to undertake the task. A charge of one mark or shilling is made by the inspector to the owner of each pig that he examines, and in addition to this a sum of about 30 marks as "prize-money" from the State should he discover the presence of T. spiralis, in which case specimens are also taken from the small intestines and sent with the rest of the sections to the State District Physician for the latter to re-examine it in order to ascertain if trichinæ really are present.

The suspected carcass must be either buried with quick-lime, or it may be used for purposes other than those of consumption. An exact translation of the law respecting the examination of pig's flesh for T. Spinalis is to be found below.

But *revenons à nos moutons* or rather *cochons* in this case.

By this time the inspector will have appeared on the scene with his microscope under his arm, dressed in his best clothes with face washed and hair well greased, and, duly filled with the sense of his own importance he sets to work, and when

the inspection is at an end, he returns to his own home and proceeds with his shoe-making, carpentering, ploughing, or whatever the occupation may be in which he has been temporarily interrupted.

The exact method of procedure will be hereafter given in the rules relating to this matter.

The "butcher," it may be observed, is not, as a rule, solely a butcher by profession; his trade, generally, is such that he would be out of employment in the winter were it not that he was able to turn his hand to pig killing; hence it is that these amateur butchers are as often as not builders or stonemasons. The butcher is at the head of the proceedings as soon as the inspector has finished his part of the business, and the farmer is therein "assisted" by every occupant of the house, from the aged grandparent down to the last born, for the "Schlachterfest" is not to be missed on any account, and as well as the rightful occupants of the house, all the relations, friends and neighbours are invited to assist, until the already heated room is rendered almost unbearable with a variegated odour of humanity (unwashed) and pork.

The scene is difficult to describe—still more difficult to imagine—unless one has been present at one of these orgies. In the middle of the room is to be seen a huge, round block of wood, more or less battered out in the middle—generally the trunk of a beech tree; surrounding it are four sturdy youths, or maidens, each armed with a curious instrument, more like a turnip-hoe than anything else, except that the "hoe" part is in the same line as, instead of being at right angles to, the handle. These implements, keenly sharpened, are used to chop up the meat into indescribably fine pieces for sausages, and the butcher from time to time throws on to this block, fresh "material" in the shape of pieces of flesh or fat, or a few pinches of salt, pepper, marjoram, cinnamon, allspice, or saltpetre, tasting every now and then with the air of a connoisseur, the raw mixture, in order to ascertain if it is as it should be.

The clamour caused by these choppers, which are pounded up and down by the hour together, as hard as lusty and willing arms can pound them, and the incessant chatter and laughter of all the brothers, sisters, cousins, aunts, and uncles, creates a din once heard never forgotten. In addition to the above described quartette, are many other busy merry groups of workers, some superintending the boiling of those kinds of sausages that are cooked, some helping to mash and prepare the gut, some filling the sausages, some carrying

off hams, sides, and bones to be salted and pickled, some tying the sausages and pricking them all over with a fork to allow the steam generated in boiling to escape—in short, each one occupied in getting up an appetite with which to reduce the number of sausages before they ever arrive in the store room or cupboard of the good wife of the house. In different parts of Germany different kinds of sausage are fashionable, so that one has not nearly enumerated all the different kinds that are made by describing the following varieties :—

(1) "Mettwurst," or "chop sausage," made of the best parts of the raw meat and a little fat, spices, etc., very finely chopped and encased in the large intestines, and wood-smoked for about three weeks in a specially prepared chamber through which a chimney passes. Eaten raw.

(2) "Bratwurst," or "frying sausage," which is the same as No. 1, only put into the small intestines, not smoked, but fried before eating.

(3) "Rotwurst," or "blood sausage," made with the boiled fat, heart, lungs, kidneys, tongue, etc., a little raw flesh and the blood, and a great deal of spice. This is put into the stomach, bladder, and large intestines, then boiled again for about half-an-hour and eaten cold, cut into thin slices.

(4) "Sülzerwurst," or "jelly sausage," rather similar to No. 3, but without blood. This tastes rather like brawn.

(5.) "Weekerwurst," or "whitebread sausage," made with the boiled skin, brain, and odds and ends of boiled or raw flesh, quantities of onions, and white bread soaked in water and pressed dry; boiled an hour, and before eating it is fried.

(6.) "Leberwurst," or "liver-sausage," made with the boiled liver or fat, chopped *very* fine, and spices added to taste. Boiled a quarter of an hour and eaten cold. This is considered a great delicacy, and tastes rather like *pâte de foies gras*.

There are innumerable varieties to be got out of the above, but the various kinds described are really the groundwork upon which the others are based, the difference being more in the name than anything else; but, as before stated, each province has its own special system of nomenclature, though the actual difference is very slight.

The Schlachterfest usually occupies the whole of the day, and the participators in its revels, having amply "sampled" specimens of their own and their neighbours' handiwork, return to their homes planning their own coming "Schlach-

terfest," or comparing notes, should that important festival have already taken place.

It may be mentioned that now nearly every peasant takes the precaution of insuring his pig, so that in the event of *T. Spiralis* being found to be present, he receives about two-thirds of the animal's entire value.

Annexed are the laws relating to the Compulsory Inspection of Swine's Flesh, translated from the German.

POLICE ORDERS, 1874.

(1) Any person killing a pig, or causing one to be killed, is compelled to have the same microscopically examined by a certificated inspector, before it is cut up. The meat shall not be cut up for sale, prepared for food, or sold, until it has been certified to be free of trichinæ.

(2) The same examination must take place on the uncertificated carcass of any pig slaughtered outside the district.

(3) Any professional swine slaughterer, pork butcher or any dealer in any form of pig's flesh, must have in his possession a "Slaughter Book" and "Meat Book," in which must be entered by the inspector the date and result of official examination. The same book must be kept for at least two years succeeding the date of last entry, and must be produced on demand of the local police, or on demand of the purchaser of the meat. Private individuals must have a certificate from the inspector, and keep the same for a period of not less than three months, and produce the same when demanded by the police.

(4) If after examination (see pars 1 and 2), the meat be found to be beyond doubt trichinosed, the inspector, as well as the owner, shall at once report it to the local authorities, and forfeit all further rights of disposal over the same.

(5) The local authorities must make it their business to see that all the meat be rendered unfit for human consumption, by the use of a sufficient quantity of strong acids, leaving it only in such condition, that its use for technical purposes be not destroyed.

(6) For the prosecution of the microscopical examination of the pig's flesh for T. Spiralis, as well as the booking and certifying of the same, the hereafter given method of carrying the law into execution is imperative.

(7) Any person failing to act in accordance with pars. 1—3 is subject to a fine not exceeding 30 marks in every instance, unless he shall have come under the power of penal law, and thereby rendered himself liable to a lighter penalty.

(8) These rules come into force as soon as the inspector is appointed, and his name and address are registered at the Local Police Station.

(9) Also, shall the cutting up offering for sale, selling or otherwise disposing of meat, sausage, or other preparations infected with "Tænia Solium," be declared to be injurious to health, and the purveyor fined, according to par. 7.

(10) Thn inspector is also bound to examine the meat as carefully for "Tænia Solium" as for Trichina Spiralis, and to give a certificate to the effect that the meat is free from them, otherwise he must report their presence to the local authorities. No further charge is to be made for examination for T. Solium.

(11) The meat infected with T. Solium is to be destroyed or rendered not injurious according to the method prescribed in par. 18 (see below).

Methods of carrying above laws into effect.

(1) All doctors of medicine, qualified apothecaries, the veterinary inspector of the district, or the local veterinary surgeons, have the right to microscopically examine the meat. Before doing so, they must register themselves at the local magistrate, and there swear on their oath to fulfil the law in this respect.

(2) All other persons who wish for the appointment of meat inspector, besides furnishing a proof of their reliability, must pass an examination before the District Physician appointed by the State, and must receive a certificate attesting their efficiency in this respect. The fee for the above examination shall be 3 marks; the stamp for the same to cost 1 M. 50 pf. (1s. 6d.)

(3) On receiving the certificate of efficiency, the holder is entitled to permission granted without further cost, by the local authorities, enabling him to conduct examination for T. Spiralis. The inspectors that shall be appointed must be sworn in by the local authorities, and their names and addresses shall be publicly announced.

(4) The number of meat inspectors in a district shall be decided by the local magistrate.

(5) If insufficiency or carelessness in examining the meat be proved against the inspector, his appointment as inspector shall be withdrawn and transferred to another, the withdrawal and transfer being made public.

(6) The State District Physicians are entitled to give theoretical and practical instruction in the examination for trichinæ, for a fee of 6 marks.

(7) The choice of a suitable microscope for the purpose of examination, is to be left to the candidate. The same must be tested by the State physician of the district, and a written formula given by him, declaring it to be suitable for the purpose required. The same must have a power of not less than 100 diameters, and be of such quality as to enable the object to be seen clearly and sharply.

(8) The fee for each microscopical examination for the entire carcass of slaughtered pigs, and for any portion of meat brought on to the premises shall be one mark, to be paid by the owner of the entire carcass, or part of the slaughtered pig. Should the inspector be obliged to leave his village for purposes of examination, the value of the time thereby lost, shall be refunded to him by the employer.

(9) In order that the inspection shall cause as little delay as possible to the inspector, the proprietor of the pig or of the meat shall on the day preceding that on which the pig is to be slaughtered, give due notice to that effect, and the inspector shall then be bound to conduct the examination before noon on the day following that on which he shall have received the notice. Should he receive the notice before noon, he shall then be obliged to undertake the examination on the afternoon of the same day.

(10) For the examination of newly-slaughtered pigs, portions from the following parts shall be taken: the muscles of the diaphragm, abdomen, larynx, intercostal muscles, the roots of the tongue, and the muscles of the eyeball. The inspector must either cut out the above portions himself, or else cause it to be done in his presence.

(10a) No inspector shall undertake the microscopical examination of more than six pigs in the same day. Should he do so, he incurs the punishment referred to in par. 5.

11) The following are the rubrics for the Swine Slaughter Book (see par. 3 of the Police Orders):—

No. of Book.	Date of Slaughter.	Age, sex, race, and marks of Identification.	Name and Address of former Owner.	Date of Microscopical Examination.	Certificate from Inspector and result of the Inspection.	Remarks

Rubrics 1—4 shall be filled in by the purveyor.
Nos. 5—6 to be filled in by the inspector.

(12) For professional purveyors of imported meat, the Meat Book is to contain the followiug rubrics.

No. of Book.	Date of Arrival of Goods.	Description of Goods.	Weight of Goods.	Name and Address of the Supplier of the Goods.	Place and Date of the Microscopical Examination.	Result of Examination.	Remark

The invoice from the supplier must be numbered to correspond with the entry in the book.

(13) Such meat shall not be offered for sale or sold until it has been proved to have been examined and found free of T. Spiralis.

(14) The proof shall consist either in producing a copy of the examination signed by the inspector, and witnessed by the authorities of the district from which the meat has been brought, or else the meat shall be examined on the premises of the dealers and there certified to be free of trichinæ.

(15) The inspector shall also possess an Examination Book with the following rubics in which details and result of every examination must be entered.

Current No.	Proprietor of the Pig or the Meat.	Nos. of the Slaughter and Meat Book belonging to the Dealer.	Subject to be Inspected.	Date of Microscopical Examination.	Result of Examination.	Remarks

(16) Should the inspector find the meat examined to be free of T. Spiralis, he shall state the same in the book of the purveyor, or in the case of private individuals, he shall give them a certificate to above effect.

(17) Should he detect the presence of T. Spiralis, he shall at once communicate the fact in writing to the local authorities, and shall also intimate the same to the owner.

The specimens shall be at once sent to the State district physician for him to re-examine.

In the event of trichinæ existing in a newly-killed pig, portions of the intestines shall also be examined for intestinal T. Spiralis.

(18) The police must take precautions that the trichinosed meat shall not be used for consumption by either man or beast, but the following is permissible:

(*a*) Skinning and removing of the bristles and using the same.

(*b*) Melting the fat and using the same in any way whatever.

(*c*) The using of parts suitable for either soap or glue.

(*d*) Chemical preparations of the whole of the body in chemical works.

Should the uses mentioned in (*c*) and (*d*) be impracticable, the whole of the parts therein mentioned are to be destroyed, either by fire, or by burying, covering with lime or chloride of lime solution.

(19) Should the inspector find trichinæ to exist, he is bound to report the same to the local authorities, and the latter must see that the meat is destroyed according to the method prescribed in par. 18.

ESSAY ON "THE DIAGNOSIS OF LAMENESS IN THE HORSE."

BY "BADMINTON."

I PROPOSE to consider a mode of examination of an obscure case of lameness. The same method will apply as a part of the examination of horses as to soundness.

Lameness is manifested:—

1*st.* When the animal is at rest;

2*nd.* When the animal is in motion.

1*st. When the animal is at rest.*—This part of the examination is conducted both in and out of the stable, but it is always preferable to see the animal first *in* the stable as we may there notice valuable symptoms which are not manifested, or that escape our notice, after the animal has been led out. A limb may be suspended; alterations of structure may be noticed; but if the animal is standing on all four feet, first notice the fetlocks and pasterns. In the endeavour to ease the affected limb by putting on less weight the pastern is rendered more upright, and that of the sound limb more oblique.

Pointing.—This may be from fatigue or lameness, or from a habit contracted from a previous lameness. If from fatigue, usually a fore-foot and a hind are pointed simultaneously, but of different sides; *e.g.*, the near fore and the off-hind.

In pointing from disease, one foot is pointed at a time; and when one limb or foot is diseased, that foot only; when both fore-feet, each foot alternately.

As a great rule, however, pointing is premonitory of navicular disease, though it is seen in "sprain of the back tendons," splint, etc., and even in corn. It is not a constant

symptom in navicular disease, in which it may be seen months before lameness occurs, or may be absent for some weeks, or even a month or two after lameness.

When the lameness is in *one* hind-limb, various positions are affected. If the animal stands with the lame limb in advance of the sound one, the position generally indicates disease in or below the hock. In a severe case of open hock-joint, the foot was drawn up to the abdomen. The converse condition is seen in rupture of the flexor metatarsi muscle.

Luxation of the stifle-joint will also be indicated by the excessive extension of the hind-leg backwards with inability to flex the leg.

When *two* legs, either fore or hind, are simultaneously affected, relief will be sought by resting the foot or leg of each side alternately, giving the longer relief to the lamer limb, if there is a difference, and by endeavouring so to change the centre of gravity as to cause the greater weight of the body to bear upon the sound extremities.

"A horse with acute pain in the fore-feet," says Principal Williams, "will stand with his hind-limbs advanced beneath the body, resting first one fore-foot and then the other, and every time he moves will rear up his head and stretch out his neck in expression of the pain he suffers; but should the pain be in both hind-feet, he will stand with his fore-feet beneath his chest and towards the central line of gravity; his body pushed forward, his head hung down, in order to remove the weight as far as possible from the seat of pain. he will first ease one hind-foot and then the other, breathing heavily and showing other signs of acute pain."

The position of the feet when all four are affected with laminitis is the same as when the front feet only are affected.

Having viewed your case as it stands, next send the animal over in the stall and watch the first movement very carefully. If there is lameness in a hind-limb it is premonitory of spavin and oftentimes the only indications of this disease are those seen in the stable. The animal may now be brought out, but before this is done all clothing is to be removed.

The careful practitioner will watch the action of the animal as it is led out of the stable.

2nd. While the Animal is in Motion.—Here two points have been considered:—

(*a*) The designation of the lame limb or limbs.

(*b*) The seat of the lameness.

(*a*) *The Designation of the Lame Limb or Limbs.*—Some practitioners, in examinations as to soundness, examine the

more common seats of lameness *before* trotting, while others prefer to have the animal trotted before examining. Each method has its advantages and disadvantages, and it is much a matter of habit one way or another. Personally, I prefer to see the animal move before examining, and for the reason that the effect of a prior examination is to cause one to look for lameness in a "suspected" seat, and oftentimes to imagine the existence of lameness where it is absent.

All clothing having been removed, have the animal trotted immediately on sets, if possible, at the rate of five or six miles an hour. If the bridle is not a snaffle, a halter is preferable. Instruct the man who leads the horse to hold the rein at about eighteen inches from the mouth. This will prevent "knowing individuals" from holding up the animal's head to prevent "nodding." The trot at above speed is the best for the diagnosis of lameness; any friskiness or high speed makes detection of slight cases a difficulty.

When the animal is going *from* you, the hind limbs and croup are to be noticed; when coming towards you, the fore limbs.

It is, perhaps, needless to say that if one limb only is affected, a horse raises his head and fore part of body or croup *from* the lame side and drops on the sound side, as the lameness is either in the fore or hind limb respectively. The descent of the head also accompanies that of the sound limb.

In observing the hind action, notice whether the hocks are evenly flexed, watch the croup, and listen to the sound of the feet. The quarter of the lame side will be elevated, and that of the sound side thrown forwards and downwards by a jerking motion; the head being moderately steady if the pain be not great, and jerked if there be acute agony.

"When the lameness is in *both* hind limbs," says Principal Williams, "the animal is both stiff and lame, but mere stiffness must be distinguished from lameness, though it is often confounded with it."

A slovenly action must not be mistaken for lameness; in such a gait the animal throws his feet about as if they did not belong to him.

It must also be remembered that when a horse is lame in both fore-feet, he picks up his hind-legs quickly and puts them down quickly, giving an appearance of string-halt.

"*Cross-lameness*" is generally understood to mean an *appearance* of lameness in a sound limb diagonal to a lame one. It is a great bugbear to students, for obvious reasons.

But no mistake need be made if the animal be carefully watched, when, supposing the *true* lameness be in a fore-limb, the irregularity of movement in the quarters is seen to be caused by the elevation and dropping of the head and fore part of body. Also that the "*true*" lameness is the one more pronounced. The comparatively rare lameness in diagonal limbs simultaneously must not be overlooked.

We next notice the animal coming towards us. Lameness in *one* fore-limb is a comparatively easy matter to diagnose. The symptoms have been already described. When occurring in both fore-feet, it should be first mentioned that the animal seems to go sound. But the action is very short, and there is a want of freedom of movement. Each foot is put carefully down and picked up quickly, from the pain caused. There is also more or less rolling of the body. The favourite simile of many "horsey" individuals, when describing this lameness, is that the animal goes "like a cat on hot bricks." Another symptom is that when coming towards you the animal appears lame in one limb, and when moving from you lame in the other. As already mentioned, the hind-limbs are picked up quicker than ordinarily.

"*Bridle Lameness*" is generally seen in horses exercised in a circle. There is a long step and a short one, the latter being in the fore limb nearest the centre of the ring. Send the horse the opposite way round, and the short step is changed to the other limb; so it is seen that the difference in length of steps is simply to enable the animal to go in a circle. If the steps were of the same length, it is evident the horse would go straight.

This peculiarity of action is also seen when the head is pulled to one side, also in young animals when first bitted. If in doubt, get your man to lead from the other side; but some horses will not trot quietly if led from the off side, when it will be necessary to have a man on each side, and the animal's head to be kept straight.

Some horses, though going sound, or appearing to go sound on the straight, show lameness when turned round; therefore, this part of the examination should never be omitted. The horse should be turned sharply round—that is not *carefully*—towards your man, when the limbs are made a pivot of movement for the body, and every one put to a searching test. Afterwards the animal may be backed, in which movement string-halt and shivering are particularly noticeable. It is sometimes advantageous to cause the patient to travel on an inclined plane, especially when the

lameness is located in the fore legs, by way of exaggerating the pain by the overbalance of the frame, and thus intensifying its manifestation. Examination whilst the animal is being ridden has also been recommended.

(*b*) *The seat of the lameness.* Having found the lame limb, the first thing to do is to have the shoe removed, and it is as well always to superintend this operation. Watch every step of the process, including the examination of each nail as it is drawn, exploration and percussion on the solar surface of foot; exploration with the pincers and percussion of the wall, while the foot is on the ground. Also notice the "wear" of the shoe. The more common seats of lameness are the foot in front and the hock behind, and lameness oftener occurs in the fore than the hind limbs. But a great deal depends on the breed and make of the horse, and the kind of work he does, and whether he does it on hard or soft ground.

The "tread," or in other words, how an animal puts its foot to the ground, is oftentimes very characteristic, whilst at others the gait or mode of projecting the lame limb is an indicative symptom.

How different, for example, is the going of a horse lame from a prick to one lame in the shoulder! In the one case, the limb is advanced freely, and the foot put carefully to the ground, while, in the other case, the limb is dragged rather than lifted. It will be observed whether in going the animal treads more upon the heel or the toe, or whether he goes more upon the inside quarter than the outside.

If the pain is in the posterior part of foot, as in navicular disease, for example, the toe is put down first; and *vice versâ*.

Should the pain be in the inside, he crosses his legs. Some say a short step occurs in lameness *above* the knee, and a long one when lame below.

(The short step by the *sound* limb is to take the weight off the lame one as quickly as possible.) Also that when a horse stands with the lame leg in advance of the sound one, it generally points to disease *below* the knee; but if he places it in a line with the sound limb, it can be relied on as being *above* the knee. In all cases of lameness a horse tries to avoid much use of the part affected on account of the pain consequent on movement.

Says Principal Williams: "In shoulder and knee lameness more particularly, the signs of pain are more discernible during the *elevation* of the foot from the ground; whereas in

foot and other diseases below the knee, the converse is the rule."

With the information then of the duration of the lameness, whether its occurrence was co-incident with any accident such as a blow or a fall; whether it followed a recent shoeing, whether the lameness increased or diminished on exercise, or whatever else an intelligent and interested observer may have noticed; we proceed to examine the limb with the hand. The veterinarian, accustomed to the feel of horses' limbs, will soon detect the presence of heat and swelling, or pain on manipulation, but in the absence of these positive symptoms, we are only left with consequent negative symptoms and peculiarities of gait.

For example, if there be neither heat nor swelling in the limb, nothing in the superficial parts of the foot to account for lameness, we may conclude the trouble to be in the deep structures of the foot or a part thickly clothed with healthy tissues.

Peculiarities of Gait.

Shoulder Lameness.—In this lameness particularly, the gait is characteristic. Pain or inability evidently intimidates or prevents the horse from lifting and projecting the lame fore-limb in the manner and with the freedom he does the sound one. He cannot get it forward in a direct line without pain; to avoid which the limb is thrown outwards and brought forward with a sort of sweep, the toe being dragged—or nearly so—along the ground. Though it may appear strange, no two lamenesses have so frequently been confounded as foot lameness and shoulder lameness; the best explanation of which seemingly unpardonable error in judgment probably is to be found in the fact that there is nothing to be seen in either one or the other to account for lameness. But the manner of carrying the foot is sufficient to obviate any such error. If the foot be lifted high, the shoulder is little, if at all, affected. It is principally in the lifting of the foot that the pain of shoulder lameness is caused. Pain, heat, and swelling will be discovered on manipulation, though the two latter symptoms are not so apparent as might be supposed through the joint being partly covered by the levator humeri muscle. So, in order to discover the swelling, it will be necessary to push this muscle to one side; it being only loosely attached. Next, take hold of the limb and work it backwards and forwards, also drawing it *from* the body, when the animal will evince

pain. In some well-marked cases the extension of the fore-arm by the examiner will cause the animal to rise bodily from the ground. In cases, however, in which only slight pain seems apparent, caution must be observed, as some horses are naturally fidgety and will not stand such handling.

Shoulder lameness is not so common as many people suppose, but if along with the peculiarities of gait there should be pain on manipulation, the case may fairly be considered as one of shoulder lameness.

Elbow Lameness occurs from disease of the joint, sprain of the lateral ligaments, and from laceration of the triceps extensor brachii muscle. The commonest cause being a fall with a load, when this accident is known to have happened —or in case of the attendant denying it, there is cause for suspicion—a useful hint has been obtained as to the seat of the lameness. When the ligaments are sprained or the triceps injured, the diagnosis of the seat of lameness is easy, for there will be swelling, pain, and heat, in addition to difficulty in moving the articulation. When the internal ligament is injured, the horse stands with his foot and limb thrown outwards. This he does to prevent, as much as possible, the injured parts being pressed upon by the pectoral muscles, and when the triceps is the seat of injury, the fore-arm is flexed upon the humerus; the action of the flexor brachii being now unopposed, the knee is elevated. the leg flexed from the knee downwards, the toe of the foot touching the ground, and the limb semipendulous. When the horse is made to move, he drops considerably, and seems in danger of falling every step he takes, the limb itself almost bending double when any weight is thrown upon it. This excessive dropping during progression is characteristic of elbow-joint lameness, even when there are no external signs, such as heat, swelling or pain, visible.

Knee-Joint Lameness.—When we consider that the knee-joint is the analogue of the hock, and as such enjoys a greater freedom of motion than the other joints of the limb, also its anatomical complexity, it is a matter of surprise that disease is rarely found apart from traumatic causes. "The gait is chronic carpitis," says Mr. Cherry, "affecting both knee-joints, gives to the rider the sensation of the chest being displaced from its right position, a sinking or 'foundering,' and which feels as if it would increase at every step of the horse. When attention is drawn to this peculiar gait, it is easy to be distinguished from the short cat-like step in naviculartritis, which gives to the rider a sensation of the chest being raised

up, or an attempt at doing so; further, the feet in navicular-thritis are brought to the ground with the toe first, and in consequence the step is short and stilty, from the weight being thrown as much as possible on the column of bones, to relieve the affected tendon or surface over which it plays; and from the same cause there is a great inclination to canter, a pace which, when slow, brings into play but slightly the flexor tendons or navicular joint. In carpitis, on the contrary, these symptoms are reversed, from the cause of lameness being seated on or amongst the carpal bones. The effort is not now to throw the weight on to the bony column, but on to the tendons and ligaments, and by this means to avoid concussion; hence the limb is carried forwards as nearly straight as possible; and still further to affect this object, it is thrown with a circumductive motion outwards, and brought to the ground with the heels first, as is shown by the wearing away of the points of the heels of the shoe, This mode of progression produces a long step, and at the same time the fore-quarters are dropped or lowered, which has been, I doubt not, the origin of the term 'chest-founder.' The diagnostic characters of the disease affecting one leg only are the same as exist in both; but from the contrast which is afforded by the sound limb these are much more recognisable than where both are affected; to these, however, one more characteristic must be added, the step of the lame leg being rather longer than that of the sound limb. The characters are very much akin to those considered to belong to shoulder lameness, but from which it may be readily distinguished: first, by the circumductive manner in which the leg is thrown forwards and the straight knee; secondly, by the absence of the dragging or striking of the toe against the ground; thirdly, by the stepping on the heels and the greater firmness on standing; but perhaps one of the best guides in diagnosis is noting whichever joint is attempted to be least brought into use." The inflammation being deep-seated in the bones is not accompanied by much external heat; nor is there much swelling until osseous matter is deposited. The bones situated on the inner side of the joint are the most generally affected. From their being more under the centre of gravity, they receive a larger portion of the weight sustained by the fore extremities than the bones on the outer side of the joint. Therefore the head of the inner metacarpal, trapezoid, and os magnum in the lower, and scaphoid and lunar in the upper row are most frequently diseased. But it is very rare indeed to find the disease extending to the bones of the upper row.

Sprain of the Superior Carpal or Superior Check Ligament, involving principally the knee-joint. It will not be out of place to refer to this lesion under the above heading. Lameness is manifested by difficulty in flexing the knee, with pain, heat, and swelling immediately above and behind the joint. In severe cases, the inflammation extends to the tendons of the flexors perforatus and perforans, causing thickening of them, and thus interfering with their free play in the carpal groove. This condition, along with distension of the bursa —which appears as a tense fluctuating swelling just above and behind knee, and known as "thorough-pin of the knee" —causes excessive lameness, which, in the gait, has some appearance of shoulder lameness.

(*To be continued.*)

MILK SUPPLY OF COPENHAGEN.

DENMARK has long been famed for its dairy produce, although it is only within the last decade that the Government of that country has enforced sanitary regulations, and exercised control over the milk and butter supply, with regard to its production in cleanliness and purity.

Private enterprise, however, in Copenhagen has gone far in advance of the laws enforced by the Government on this important industry, and a short account of the system followed by the Milk Supply Company of that city affords us ample proof of the necessity that exists for the careful precautions put in force by it, and the splendid success, financial and otherwise, that attends their strict observance.

At the present time, it sells the milk of no less than 4,500 cows. In 1878 the Company was formed with a capital of only £600, securing the disinterested co-operation of three public-spirited men—Dr. Panum, the late eminent Professor of Physiology, in Copenhagen University; Kammerherre Bille, who had been Danish Ambassador at Washington, and Dr. Borch, a leading practitioner in Copenhagen.

The concern thus assumed a hygienic and philanthropic, as well as a commercial, character.

Professor Panum at once gave the use of his own laboratory for a daily analysis of the milk as to density and specific gravity, and this daily analysis has been continued to the present time, both at the University and on the Company's own premises. It is not, however, merely in density

or specific gravity that milk may be defective. It may be blameless in these respects, and yet be far from fit for human food, through unsanitary influences; and it is to the admirable arrangements of the Company to prevent such an occurrence that we more particularly beg to draw the attention of our readers:—Every contractor undertaking to supply the Company comes under a moral obligation to carry out the Company's rules for the feeding and treatment of his cattle, and the Company will only deal with those contractors who give complete satisfaction as to the superiority of their herds. The Company pay the highest price obtainable for good milk. They also share with the contractor any loss he may innocently make through disease breaking out among his cows or his workpeople. He has, therefore, a strong interest to pay the strictest regard to the Company's rules. These rules are worth noting as showing with what care it is sought to protect the public from harm and to secure the greatest benefit from the most necessary article of human food. The cows supplying milk to the Company are examined at the various farms by veterinary surgeons at least once a fortnight. The surgeon must make a report on a prescribed form, stating the number of cows inspected, and in what state of cleanliness he has found the byres and animals. He must also report particularly any case of tuberculosis or other disease that may have occurred, the quantity of milk given by such cows, and how it has been used. Besides the surgeon, an inspector makes a regular round of the dairy farms, and reports upon the quality of the hay and straw, whether the animals are fed according to the rules laid down by the Company, whether cleanliness is observed in milking, the stock of ice and its storage, and the state of the cooling apparatus. The Company also sends out a head dairymaid, whose duty it is to see that the milkmaids are clean and tidy at their work, and that proper care is taken in the cooling of new milk. The contractor must implicitly follow the instructions of the surgeon, and he must immediately report the existence of disease found on the surgeon's visits. When any animal is declared to be suffering from tuberculosis, it must at once be separated from the rest of the herd, and disposed of as soon as possible. In suspicious cases the contractor must withhold the milk until the circumstances can be inquired into. In such cases he receives the full price for the milk. In fact, if the contractor is careful to obey the Company's rules, he is not a loser. If he should knowingly send to the Company milk which is

found to be of an inferior quality, the milk is refused without compensation, and the contract is forthwith cancelled. The food of the cows must be such that it shall give no bad taste or taint to the milk. The proportion to which stall food is to be given must be arranged with the Company before the contractor can begin to supply milk. Brewers' grain and similar refuse from distilleries, turnips, turnip leaves, and every kind of fodder which is not fresh and in good condition are absolutely forbidden. Carrots and mangolds (sugar beets) are permitted up to half a bushel per cow, but only when 7 lb. of corn, bran, and cake are given along with them. Cows supplying infant milk never get more than a quarter bushel of carrots per head. Rape seed is the only oilcake permitted to be used. Stall feeding in summer is on no account allowed; the cows must be fed in the open air upon clover and grass. Dry food or cut corn can only be given with the Company's permission. The milk of cows newly calved must be withheld for twelve days. In autumn, before being taken back to stall, the cows must be clipped on the udder, tail, and hind quarters. Strict cleanliness must be observed during milking. Each milkmaid is provided with a dress and headkerchief to be worn whilst milking, and these must be washed two or three times a week. During the darker months each milkmaid carries a good lantern, which is so placed as to cast its light under the cow. Immediately after milking the milk must be cooled down on a specially provided cooling apparatus to 40 deg. F., above which it is not allowed to be sent off from the farm. The milk is delivered to the Company twice daily in vessels provided by the Company. These vessels, though returned clean, must be rinsed out with cold water at the farm, and must be carefully kept in a dry place till next required. On no account may they be used for any other purpose.

With all these precautions before the milk reaches their own premises, the Company are none the less careful in preparing it for delivery to their customers. Their central station is at Frederiksberg, on the eastern outskirts of the city, where about 200 persons are employed. Here the utmost discipline is maintained; promotion is by merit; neglect of rules, even the slightest is checked, and premiums are given to those who strictly obey them. The health of the employees is carefully looked after, and any case of infectious disease in their families or the neighbourhood of their dwellings must be immediately reported, and employees may be suspended from work so long as they are a source of danger.

They have the less reluctance to submit to such regulations that they are paid full wages during necessary suspension. Moreover, the wages are so much above the average, and wilful concealment is so severely punished that the work-people have every inducement to assist the Company by instant notification of infectious disease. All the milk is filtered before being sent out to consumers. Formerly sponge filters were used, but it was found, in spite of the utmost care, impossible to thoroughly cleanse the sponges; some of the fatty matter always remained, even after elaborate rinsing and steaming. Gravel filters, after an invention by Mr. Busck himself, are now used. The milk is poured into a receiving tank at a height of five or six feet from the ground; from this it is carried into a lower tank, which it enters at the bottom, and in which it rises through three layers of gravel. In the first layer the gravel is about half a pea in size, in the second it is smaller, and in the third the particles are like pin heads. On the top of the upper layer are six layers of fine cotton material. On rising through the filter the milk passes into a storage vessel, in which are perforated tubes so constructed that the milk is drawn from every part of the tank, so that the quality is kept equal. The quantity of disgusting pollution that is got rid of by means of these filters must be seen to be believed. Specimens of it are kept in the Company's offices, and one cannot help thinking that we are a long-suffering people, if our milk, which is unfiltered, contains such elements of putrescence. It is needless to say that the gravel used in the filters is thoroughly sterilised each time it is used. It is cleansed by boiling and stirring in hot water and soda till the water comes away quite clean, and then it is steamed at a temperature of about 302° F.

A special feature is made of the supply of infants' milk. It is separately filtered, and at once bottled by machinery into clear quart bottles. The corks are tied down and sealed, so that the purchaser may be sure there has been no tampering with them. The bottles are kept in ice till ready for delivery. Apothecaries are allowed to sell the bottles on Sundays when other shops are closed. Cows supplying milk intended for infants must not have any oil-cake, and only half the quantity of carrots which the other cows may have.

A more perfect system to ensure the cleanliness and purity of milk and butter could hardly be devised.

The Company has unquestionably done noble and benevolent work in the large provision it has made for sound and cheap milk among the poorer classes, and particularly in

bringing within reach of the very poorest a supply of specially-prepared milk for infants.

We fervently hope the time is not far distant when we will not require to go so far afield as Denmark for an example of dairy management unequalled in this country, and worthy of the highest praise.

ANCHYLOSIS OF THE JAWS IN A DOG.

JOSHUA A. NUNN, F.R.C.V.S., C.I.E., D.S.O., VETERINARY CAPTAIN, A.V.D., PRINCIPAL LAHORE VETERINARY COLLEGE.

THE patient, a large bull-dog, about eight months old, was brought to the hospital of the Lahore Veterinary College, on October 28th, his owner, "a lady," saying that he had never been able to open his mouth properly, and had a difficulty in feeding, also that he was unable to defend himself against the attacks of other dogs, who seemed to be aware that he was helpless, and bullied him. The patient was able to drink, and could open the jaws sufficiently wide to allow of a space of about $\frac{1}{8}$ in. between the crowns of the incisor teeth, but no more; in fact, when it was attempted to force the jaws further open, they were found to be forcibly locked. On October 30th, an anæsthetic, chloroform one part, ether two parts, was administered, and by means of two small straps passed round the upper and lower jaws behind the canine teeth to give a purchase, the mouth was forcibly opened with a loud snap, like the crack of a hunting whip. The dog was kept in the hospital, and the after treatment consisted of massage to the joints, the mouth being opened three or four times a day by grasping the lower jaw between the finger and thumb, and pushing the cheeks in between the molars in the same way that a dog is made to open his mouth to take a pill. He was also given large bones with little on them to gnaw at so as to make him move the jaws. The dog was discharged on November 12th, and though he showed unwillingness to open his mouth to the full extent himself, still he could be made to do so. He was able to feed properly and defend himself when attacked. The case appears to be somewhat an unusual one, and though I have seen anchylosis of the jaw in human beings, I have never yet come across one in veterinary practice. The idea of the operation I took from the gag used by Mr. Christopher Heath in such cases in man.

SOUTH AFRICAN HORSE SICKNESS.
(*ŒDEMA MYCOSIS.*)

BY M. H. HAYES, F.R.C.V.S.

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ABOUT three years ago, on my return from South Africa, where I had seen many cases of this disease, I wrote on it an article which appeared in the VETERINARY JOURNAL. As, since then, Dr. Edington has thrown much new light on this most interesting subject, I have, with the kind permission of our editor, re-written the article as follows. This disease has been known in South Africa since the year 1780.

Definition.—It is a specific fever which is characterised by intense congestion of the blood-vessels, which pour out a large quantity of serum into the neighbouring tissues. The question as to the disease being peculiar to the horse has not yet been settled. Up to the present, it appears to have been always fatal.

Geographical distribution.—It appears to be confined to Africa, and is prevalent throughout the whole of the southern portion of that continent.

Epidemic character.—"This peculiar disease seems, from information at my disposal, to be present in some parts of the Colony every year, and only assumes an epidemic form at wide intervals. Thus the epizootic character has been assumed in the years 1780-81, 1819, 1839, 1854 (Cape Colony), 1888 (Natal), 1891-2 (Cape Colony), and 1893-4 in the Free State."—(*Edington.*)

Varieties.—It is generally considered that there are three varieties, namely (1) the lung form (*Dutch: paard ziekte*), which is the most common kind, and which we might term "specific equine pleuro-pneumonia"; (2) thick head (*Dutch: dikkop*); and blue tongue. The manner in which the œdema is localised, constitutes the only difference between these three forms. Wiltshire, Colonial Veterinary Surgeon of Natal, recognises two other varieties, viz., the enteric form, and one of which ordinary fever is the most marked symptom. His observations on the last-mentioned two kinds may be seen further on.

The microbe or virus of horse sickness.—Dr. Edington, Colonial Bacteriologist from the Cape Colony, states that he has found in the blood of affected horses a microbe (a fungus or mould) which he believes to be the cause of the disease; but he has not succeeded in cultivating it apart from the animal body, and then reproducing the disease.

Immunity.—Horses are particularly subject to this disease. Mules are less liable to it than are horses, and zebras rarely get it.

Method of invasion.—The contagion does not appear to be carried by the air, as is the case of that of malarial fever of man, but seems to be brought into the system along with the fodder, and possibly in the drinking water, and is then taken up by the blood. It is, in fact, fixed, and not volatile. "I don't think it is a malarious disease, for horses kept stabled near swamps and in well-known infected places, do not die of horse sickness if fed entirely on *dry food*, and are not allowed to eat grass during the sickly season. Again, there have been instances of great mortality from it in one district, while an adjoining one, separated only by a narrow river, has been almost entirely exempt." (*Wiltshire.*) Edington explains that the fungus which produces horse sickness remains in the passive condition of spores under the influence of dry air, and is killed by prolonged drought, frost, and cold rains. The dew, which forms abundantly during the nights of a South African summer, is particularly favourable to the growth of this fungus. Hence the reasonableness of preventing horses during sickly seasons, from eating dew-laden forage.

Influence of locality.—Dry, high pastures at an altitude, say of 6,000 feet above the level of the sea, are, as a rule, free from the disease, unless they have been contaminated by the introduction of affected stock; the original home of this microbe appearing to be moist and low-lying lands. "Of late years, however, the high lands of Natal and the Orange Free State have suffered most, even in places where the disease had previously been unknown. On enquiry, I have found that, formerly, infected animals, on the sickness breaking out among them, had been sent to these places, which then became affected." (*Wiltshire*). I cannot say how long the microbes would continue to exist in a dry and cold locality, in which they would be more or less exotics. As a factor in the existence and development of the microbe, the amount of altitude above the sea seems to owe its effect to increased cold and dryness.

It is evident from the foregoing considerations that the microbe of horse sickness, if it exists, can, like that of anthrax, live and retain its virulence outside of the animal body.

Influence of season of the year.—In the Cape Colony, Orange Free State, and Transvaal, the disease rarely occurs before February; although in 1892 it broke out in the eastern

province of the Cape Colony early in January. It is usually worst in April, and, as a rule, disappears with the first frost in May. "In Natal it generally begins on the sea coast a little before Christmas; at Maritzburg, about February; and up country somewhat later. March and April are the worst months.

"Occasional cases are met with even in the winter on the coast. One undoubted instance occurred near Ladysmith during the Boer War in 1881, in July or August, when the ground was covered with snow.

"As summer is the rainy season in Natal, a hot, moist climate is supposed there to be most favourable for an outbreak of the disease, which, in this respect, does not follow any definite rule. In fact, some wet seasons have been very healthy, and some dry ones particularly deadly.

"There is no doubt whatever that the advent of frost almost invariably stops the sickness at once, and generally causes it to show in, and kill, any horses in which it may then be latent." (*Wiltshire.*)

I may mention the interesting fact that yellow fever in man, like horse sickness in horses, disappears on the approach of frost.

Yearly sequence.—Outbreaks of horse sickness do not follow any regular sequence as to time. In some places, like Pretoria, it occurs almost every year; in others, at irregular intervals.

Mortality.—During a year in which the disease is rife, the loss of horses in South Africa is very great. In the two years of 1854-55, 64,850 horses died of it; and in 1892, 13,979 horses and 149 mules. The lung form is extremely, if not invariably fatal. The other varieties are not so dangerous to life; although in them the rate of mortality is very high. Many persons who have had an extended experience of horse sickness, tell me that they have never known a case of the lung form to recover.

Contagiousness.—This disease can be conveyed by inoculation with the blood or with the yellow fluid which is given off from the nostrils, and by drenching with the diseased blood. The yellow fluid is not always virluent. "It is probable that the infection is derived, not from horse to horse as a general rule, but from certain conditions associated with soil and vegetation" (*Edington*).

Period of incubation.—According to Edington, the period of incubation varies from seven to nine days.

Predisposing causes and preventive measures.—Any debili-

tating influence, such as exposure, want of proper food, and fatigue, predisposes an animal to contract horse sickness by lessening the ability of the vital powers to resist an attack. I have been informed by proprietors and managers of various South African mail coach lines, that their horses, which are well fed, though indifferently stabled, enjoy a marked immunity from this disease, even when animals at grass in the vicinity are dying from it in great numbers. The former have to do their work at all hours, late and early. The latter, as a rule, are more or less starved. Cases of horse sickness are all but unknown in South African racing stables, the horses of which, I may mention, seldom, if ever, get any green grass when in training. They generally go out, however, in the early morning, while the dew is on the grass. Mr. Oliver Davis, of Harrismith, who is a well-known owner of horses and gentleman rider, tells me that when he was in the Natal Mounted Police, he managed, during several deadly seasons, to keep his troopers free from the sickness by fumigating the stables after sunrise and a little before sunset. His procedure was, after taking the horses out of the building, to burn a small heap (placed in an empty kerosine tin for safety sake) of dried horse dung and soiled litter, and then to shut up the doors and windows for about a quarter of an hour, until the place was thoroughly filled with smoke. The stable was then opened and the horses allowed in. Mr. Davis says that this is an old Dutch means of prevention. I may mention that he took no other precautions, such as restricting the animals to dry food. The experience of a large number of South African farmers is greatly in favour of keeping horses in a stable, or even in an enclosure, if it be intended to turn them out to graze, until the sun has dissipated the dew off the grass, say, until eight o'clock in the morning. This theory, which has the support of Edington's microscopical investigations, shows that the contagion of horse sickness requires the presence of moisture to develop its virulent properties. Damp weather seems to favour its spread. I may explain that South African farmers have few facilities for putting horses up at night in covered buildings. When they desire to keep their animals collected together, they usually put them in a *kraal*, which is simply a walled-in enclosure, the ground of which, from being constantly trodden upon, very rarely has any grass on it. I have been told by many of these farmers that the plan of keeping horses in a *kraal* at night acts quite as well in preventing the sickness as that of stabling

them. It is evident that when the disease appears in a district, special attention should be paid to stable management, or, if the horses be at grass, that they should be sent away to some high grazing ground above the zone of the disease, a plan which is adopted, generally, by owners of large droves of horses, who have, like, for instance, those at Grahamstown and Harrismith, facilities for doing so. In the case of stabled horses, they should be fed on dry food, such as "forage" (as unthrashed oats are termed in South Africa) and "mealies" (Indian corn) or oats, and should on no account be allowed any grass. In support of this advice I may mention that I have heard, from reliable authorities, of several cases of stabled horses, during an outbreak, contracting the disease, apparently from having been fed on grass, while those which were in the same stable, but which were kept on dry food, remained free from it. All these practical observations, strengthened by Edington's expert and carefully-conducted investigations, prove almost to demonstration that the contagion becomes developed into a virulent condition on grass (or other herbage) under the influence of moisture and especially of dew. Hence, the best possible preventive is restricting horses to dry food during a sickly season. So long as horses are prevented from grazing, no danger would seem to be incurred by keeping horses out while there is dew on the ground.

The water of an affected district does not appear to become infected. "I have taken the water from pools in horse-sickness areas during a season of epidemic and have examined it microscopically, but without success. Under the supposition that the spores under a protean guise might be present among the *débris* and multitudes of animalculæ with which such waters abound, I inoculated horses with as much as 10 c.c. [nearly three drachms], but without any result accruing." (*Edington.*) Some authorities recommend bleeding to the extent of about two gallons as a preventive measure. Vanderplank, of Maritzburg, informs me that he has given with marked success as a preventive a drachm of Jeyes' Fluid in a pint of water once a fortnight to each of the horses under his charge. A method of protective inoculation against horse sickness is naturally desired by Cape horse-owners, who up to the present have hoped in vain. On this point Edington does not give them much encouragement, for he says: "Our microbe is not a bacterium, it is a pathogenic mould, and according to some workers attenuation of moulds is not hopeful. . . . Thus it will be seen that if we are

to succeed in producing some form of protective inoculation, it must be by methods as yet undescribed."

"*Salted" horses.*—The common belief is that horses which have had, and have recovered from, an attack of this disease, possess immunity ever after from it; and, consequently, their value becomes much enhanced in districts in which the complaint is enzootic. During my tour in South Africa, I was able to obtain but little exact information on the subject of "salted" horses, which, I had imagined, were an ordinary article of commerce in that country. In fact, though I made many enquiries, I failed to find a single animal of the kind. The few persons I met who had, so they said, seen "salted" horses, informed me that these animals present a dejected and debilitated appearance; that the skin about their head and neck is unusually loose and wrinkled; and that they are liable to relapses of the disease, though in a milder form. Mr. Wiltshire tells me that in the ordinary course of events, they always die eventually of it. From a photograph which I have before me of a "salted" horse, I see that the hair of his mane and forelock stick out in a particularly rough and disordered manner, so that it would have been impossible to have made the mane lie on one side, or the forelock to fall straight down. I have heard that all "salted" horses have this peculiarity of the hair of the mane and tail. Believing as I do in the fatal nature of horse sickness, I am inclined to think that "salted" horses are those which are suffering from the bite of the tse-tse fly, from "surra," or which have recovered from anthrax.

Symptoms of the lung form of horse sickness.—Edington states that the first symptom is a shivering fit with a rise of temperature up to 102° to 103° F. in the evening. The temperature next morning is lower, though not quite normal, and rises still more in the evening. It thus steadily though slightly increases until within a few hours of death, when it may fall below the normal standard. Towards the end there is great congestion of the blood-vessels; the mucous membrane of the eyes and nose assumes a dark red colour; and a copious interlobular effusion takes place in the lungs. The breathing becomes extremely hurried, often about 75 in the minute, with heaving of the flanks. Depression is well marked, and there is an escape into the bronchial tubes, of serum (mixed with mucus), the presence of which, even before any discharge takes place from the nostrils, can be readily detected by the bubbling sound that may be heard by applying the ear to the front of the chest. As this fluid

accumulates more and more in the bronchial tubes, it is discharged from the nostrils, usually in large quantities, and in a somewhat frothy condition, which it soon loses if it be allowed to collect on the ground. It will then be seen to be of a yellow colour. The fluid may trickle from the nostrils, or may be discharged in streams. Although I have never measured, in a fatal case, the amount of this poured-out fluid, I would conjecture that it would be about three or four pints. This frothy serum is altogether different in appearance from the foam tinged with altered blood, which is frequently given off from the nostrils towards, or after, the termination of fatal cases of anthrax. To use Edington's happy expression, the animal is practically drowned in its own blood serum. The internal temperature is high. "One very characteristic symptom is the distension or bulging of the pits above the eyes." (*Hutcheon.*) The froth which is discharged from the nostrils is the result of the plasma which has transuded into the air cells and which is somewhat similar to the white of an egg, being churned up into foam by the breathed-in air.

This disease runs a fatal course, usually, in about four days; taking the period of incubation as about eight days. During the first two days of the attack there is little to attract casual attention. As a rule, the patient dies very suddenly, frequently within an hour or two of the time he was first seen to be ill. The general idea in South Africa is that it lasts only a couple of hours, or even less; the cause of this mistaken opinion being evidently want of ability to recognise the symptoms until they are of a pronounced character. As a rule, the end, from suffocation, comes on very rapidly.

Symptoms of other forms of horse sickness.—"In the *dikkop* form, the pneumonia is not so intense as in the lung form; the special characteristic being the swelling of the entire head.

"In the blue tongue variety, symptoms of pneumonia are not very prominent. The muzzle, lips and tongue become swollen. The tongue also assumes a dark bluish colour. It turns cold. and often becomes too large to be retained in the mouth. Thick, dirty saliva falls from the mouth.

"In what may perhaps be termed the 'enteric' form, colic is the most prominent symptom, and is—as far as my experience goes—invariably fatal. After death, the usual evidences of the disease in the lungs are apparent, though less marked than in the lung variety.

"Another form begins as an ordinary fever, with petechiæ in the white of the eyes; these are more or less large according

to the gravity of the case: I have seen the whole membrane of a deep claret colour, no white being visible.

"This fever, however, at times has a very rapid course, and delirium sets in, with a fatal result in a few hours. In some cases, colic is the prominent symptom. In others, one leg swells, and finally a large abscess bursts, leaving a raw, unhealthy sore to deal with, and a permanent thickening of the part. I have had cases of pyæmia, and death from it.

"Some of these cases, however, are very mild; the liver may be affected; and often there is a discharge from the eyes, similar to than of influenza.

"How I came to identify this with horse sickness, was by seeing these cases after a few days develop into unmistakeable ones of that disease. Lt.-Col. Duck and others have noticed the same thing.

"The temperature is usually high; often 106° F." (*Wiltshire*).

As I have said before there is no essential difference between the three varieties, namely, lung sickness, dikkop, and blue tongue.

"The records of *post-mortem* examinations, together with the temperature observations, all show that it is possible to confer upon an animal the disease in such wise that the symptoms produced will be almost absolutely identical with either of the ordinary forms [lung disease or *paard ziekte* and *dikkop*] acquired spontaneously. On the other hand, it has been seen that, dependent upon the method of inoculation, the symptoms may be somewhat varied, an inoculation into the lung producing the pulmonary form, inoculation into the subcutaneous tissue of the neck giving rise to *dikkop;* while if the means adopted consist in injecting the virus into the flank, symptoms of an engorgement of the abdominal veins and some congestion of the organs belonging to that cavity, as the chief phenomena, will be produced. On the other hand, our inoculation experiments have shown us that it is almost impossible to produce any *one* particular form as a *pure* manifestation, or, in other words, while theoretically we may hold that each of the forms dealt with may be pure forms, yet in practice we find that they each run into one another. Thus in the *dikkop* form some lung mischief, more or less marked, may be looked for, and conversely the lung form usually is attended with more or less manifestation of the *dikkop* type, usually seen on opening into the neck around the trachea, where usually there will be found some exudation lying in the surrounding tissues." (*Edington.*)

Cause of death.—Edington points out that in this disease

death is not due to a poison which is elaborated by the specific fungus; for "the injection into a healthy horse of a considerable amount of filtered blood serum, taken from a horse dying of horse sickness, has not been attended, in my hands, with any subsequent symptom at all referable to or suggestive of horse sickness." With on the contrary inoculations of unfiltered diseased blood, he was almost invariably successful in producing the disease. I may remark that tetanus furnishes us with a good instance of a disease in which death is caused by the poison manufactured by the microbes peculiar to the disease. Edington explains that the fungus of horse sickness grows in the blood, which, by acting as a foreign body, it causes to coagulate, and thus block up the capillaries, so as to produce intense congestion. The animal therefore dies of thrombosis.

Principles of treatment.—Considering the small amount of knowledge that exists about horse sickness, and the fact that little or no benefit in staying its course has been obtained from the administration of medicines, it seems almost futile to discuss the principles of its treatment. One point, however, in its pathology, cannot fail to strike the careful observer, namely, that the congestion of the blood-vessels is a mere symptom of the disease. In, for instance, ordinary congestion of the lungs, however violent and rapidly fatal it may be, there is not the peculiar and copious effusion into the bronchial tubes which takes place during the congestion of the lungs in horse sickness. Hence we may assume that the blood, in the case of this South African scourge, undergoes some morbid change, which permits the escape of a large portion of its watery constituents. The use of antiseptics and salines is self-suggestive. Although our efforts, when combating a disease, should be chiefly directed to remove the cause; still we should try to allay systems, if their violence is likely to kill the patient. Evidently following this principle, Hutcheon advises bleeding, in the first stages of the disease, to the extent of about two gallons. Wiltshire recommends the employment of hyposulphite of soda, chlorate of potash, and turpentine. From the knowledge of the good effects of turpentine in cases of purpura and anthrax, I might suggest its trial in horse sickness. It is a powerful volatile antiseptic, and tends to check congestion by stimulating the involuntary muscular tissue, which is the chief agent in causing the blood to circulate through its vessels. Edington, although failing to cure, mitigated the symptoms by giving 30 grains of antipyrin and 60 grains of quinine four times a day.

Post-mortem appearances in the lung form of horse sickness.—The lungs are invaded by a yellow-coloured effusion of serum, the presence of which can be seen on the outer surface of the lungs, upon which it appears in yellow patches. There is also an effusion into the pericardium and other tissues. The bronchial tubes are more or less filled with serum. The spleen is not specially affected—a fact which serves to distinguish this disease from anthrax. There are generally signs that pleurisy had existed. The blood is somewhat darker than usual; but does not in any way possess the tarry appearance which is characteristic of anthrax.

"On making an incision into the subcutaneous tissue of the neck, along the line of the windpipe, it is common to find lying along, and in many cases surrounding the windpipe, and the larger vessels, a quantity of clear yellow jelly, which consists of blood serum that has been pressed out of the vessels in this situation, and has subsequently undergone coagulation. If the windpipe is opened, it will be found to contain yellow fluid in all stages of conversion into the white froth that one may notice after death around the nose and mouth.

"On opening into the large blood-vessels in this area, the blood will be found to contain clots, while the fluid between may be slightly watery and is invariably of a very black colour.

"On removing the front of the chest, the cavity known as the pleuræ, which encloses each of the lungs, may be seen to be occupied by a large amount of blood-coloured fluid.

"On the surface of the lungs it is common to find a layer, more or less thick and diffused, of a yellow gelatinous material consisting of coagulated blood serum. The lungs are, as a rule, pale in colour, unless the animal has been severely ridden previous to its death. On the surface will be noticed a large number of dark-coloured lines which seem to pass over it and appear like small rivulets. If slices of the lungs be made with a knife and held up to the light, it will be noticed that the lines in question are transparent and of a yellow colour. They consist in fact of the yellow serum exuded in this situation that has coagulated, and they occupy the lines of division between the lobules of the lungs and which in health ought to be scarcely apparent. . , . In the dikkop form, the chief sign is the swelling of the head, neck, or tongue. In this form the lung may be almost or absolutely unaffected to the naked eye." (*Edington.*)

TREATMENT OF WOUNDED ANIMALS IN WAR TIME.

BY VETERINARY MAJOR RAYMENT, F.R.C.V.S.

THE following notes may interest the readers of the VETERINARY JOURNAL. On the 3rd November last year after the attack of the Waziris on our camp at Wana, I found 99 transport mules wounded and one killed. Of the 99 wounded, 42 had to be destroyed at once. In nearly every case the gastrocnemeii tendons just above the point of the os calcis or the flexor tendons below had been severed by sword cuts. Of the remaining 57, about 7 were bullet grazes, or comparatively slight cuts. The others were wounds of an extremely formidable nature. I may mention here that the Waziri swords are heavy curved weapons, with a razor edge. The cut is delivered with no great force, but with a drawing motion, which makes a very long and deeply penetrating wound. In some cases an endeavour had been made to decapitate animals. There were two or three wounds on the neck extending from top to bottom. In one case the wound began just behind the wing of the atlas, and extended to the channel of the neck, severing the cervical muscles and exposing the ligamentum nuchæ. Parallel to it, but posteriorly, were two others of equal extent. In several instances there were cuts on the buttocks twelve to fourteen inches long and three to four deep. There were cuts over the back, over the withers, ears off or split down to the base, tails wholly or partially excised, etc. In one instance a patient had a cut just below the joint of the hock, a second about two inches lower down, and a third just over the seat of curb. An interesting case was a bullet wound in the abdomen, about six inches in front of the stifle joint, with no exit wound. This last did well, the wound of entrance healing rapidly, with no symptoms of abdominal mischief.

With the exception of the usual field veterinary chests, I had no medicines or appliances. These chests contained a small amount of iodoform, some tinct. myrh. co., and luckily a good supply of carbolic acid. Of cloths for bandaging, tow, etc., the quantities were so small as to be practically useless. For the first dressings I used carbolised ghi (clarified butter, always carried by the Commissariat for the rations of native troops), cotton wool from bed pillows, and the coarse cloths used to make bags for carrying grain and flour on service. Afterwards I obtained blankets from the Commissariat, which, torn into strips, answered for bandages. In the course of a few days I managed to get

cheap native cloth and cotton wool from the surrounding villages, through the political officer. The cotton, soaked in a solution of hydrarg. perchlor., dried in the sun and teazed out afresh, did very well. Iodoform dredgers were manufactured out of preserved provision tins.

Out of 57 mules treated, one was destroyed the day after the fight. He was wounded in the hind leg, the flexor tendons being almost severed. The few remaining fibres gave way during the following night. A second, during a severe fit of colic, injured himself so badly that I had to shoot him. A third, when his wounds (severe sword cuts near hind-leg) were healed, was found to have fractured his pelvis on that side, and had also to be sacrificed. This last case, of course, reflects on my diagnosis. I should have detected the incurable injury when examining his wounds. My excuse is, that I had seventy odd wounded animals, so diagnosing had to be done rapidly.

A fourth succumbed to tetanus, a fifth to irritative fever and septicæmia. These last two were the only ones, I consider, fairly lost under treatment, death being the result of some carelessness in dressing on the part of my salutris (native assistants).

Of the others ..	2	were discharged	Cured,	November	11th.
	1	,,	,,	,,	12th.
	5	,,	,,	,,	18th.
	3	,,	,,	,,	19th.
	1	,,	,,	,,	20th.
	1	,,	,,	,,	21st.
	4	,,	,,	,,	22nd.
	3	,,	,,	,,	23rd.
	5	,,	,,	,,	24th.
	1	,,	,,	,,	28th.
	4	,,	,,	,,	29th.
	3	,,	,,	December	1st.
	4	,,	,,	,,	3rd.
	1	,,	,,	,,	6th.
	1	,,	,,	,,	7th.
	1	,,	,,	,,	10th.
	4	,,	,,	,,	12th.
	2	,,	,,	,,	13th.
	3	,,	,,	,,	15th.
	1	,,	,,	,,	16th.
Total	50				

The two remaining were left under treatment at Wana, when we advanced on Kanigoram, and were discharged cured by the salutri in charge about the end of December. All these mules did their work with the Waziristan Field Force for the

remainder of the war. Subsequently they were sent to the Chitral Relief Force, in April, and I recognised many while Veterinary Inspector of the Line during the latter campaign. In addition to these mules, six camels were wounded in the attack. Three were at once destroyed, and three treated, all of which recovered. Five private horses, one destroyed, four treated, two subsequently shot, two cured. Eleven horses of the Cavalry Squadron received sword and bullet wounds in the pursuit; all recovered under treatment. Only two were serious.

The table as below shows the totals :—

——	Treated.	Recovered.	Died or Destroyed.
Mules	57	52	5
Camels	3	3	—
Private Horses	4	2	2
Cavalry Horses	11	11	—
Total	75	68	7

I was the only veterinary officer present. Four salutris were attached to the escort. Unfortunately on the day of the action, one was away on convoy and did not return till some time afterwards. Another was on the sick list. This left only two for duty, which made me very short handed. The cavalry squadron had a salutri of its own. Hardly one of the wounds was touched with water. In the few cases where water was necessary, it was rendered aseptic as far as possible with phenyle. Large pledgets of tow or cotton were placed over smaller pieces steeped in carbolised ghi, and the whole bandaged over the wounds, excluding air, flies, and dust. When they became aseptic, and suppuration ceased, iodoform was dredged over them, the pads and bandages still being continued. I found that in these cases the dressing could be left on two to three days without being touched. In the slighter cases, and those nearly healed tinct. myrrh. co. was used as a substitute for iodoform, as the supply of the latter was very limited.

I have written the above notes to show how much may be done, even with deficient means, if antiseptic treatment be carried out as far as possible, and flies, dust, air, and water, the bearers of the germs of so many fatal diseases resulting from wounds, be excluded. The whole force being entrenched,

the camp was much crowded. I arranged to have all the transport picketed outside the breastwork during the day, and only brought in at night. This gave the muleteers a chance of getting the lines cleaned up daily. The weather was dry and cool, which was much in the favour of the patients.

DEGENERATION OF THE SPLEEN.

BY F. D. MC LAREN, F.R.C.V.S., PENTRE, PONTYPRIDD.

THE subject was a bay horse, six years old, 14½ hands high, weighing 13 cwt., being exceptionally fat. He had been bought recently by a colliery company for underground work.

Within a few days of purchase he became affected with influenza of a mild catarrhal form, but quickly recovered with appropriate treatment, and was sent to work as soon as the appetite returned and the temperature became normal.

A fortnight afterwards he showed signs of weakness at his work, but the appetite being unaffected and his general appearance continuing satisfactory, I was not called for two days, when he was observed to hang his head in the stable and refuse his food, soon becoming unable to stand.

On examination I found the mucous membranes of normal colour, the pulse 50 per minute—strong, full, and regular. There was no sign of pain beyond an anxious expression. The eye continued bright till the last.

Treatment consisted in the administration of stimulants hypodermically, but was of no avail, as he sank rapidly, dying in the course of a few hours.

Post-mortem examination next day showed the heart apparently healthy. The lungs contained about a dozen small tubercles, each containing a quantity of some cheesy material. The condition of the liver was normal. The mesenteric glands were slightly enlarged. The stomach and bowels appeared quite healthy. On cutting into the spleen, however, its substance, which had degenerated into a tarry-looking liquid, ran out of the capsule, and to this degeneration and poisoning of the blood by absorption of the poisonous material from the spleen I attribute the death of the animal.

I think the disease occurred either as a sequel to the attack of influenza, or as the result of a mistaken fattening up of the animal prior to purchase, but whether either of these causes or some other be the true solution, along with the correct pathology of the disease, I must leave the readers of the VETERINARY JOURNAL, to whom I trust this imperfect account will be of interest, to determine.

HORSE-WARBLE ATTACK.

BY THOS. B. GOODALL, F.R.C.V.S., CHRISTCHURCH.

In response to the appeal of Professor McDougall, I have pleasure in placing on record my individual experience of Horse-Warble Attack, and also the deductions I draw from that experience, and my reasons. It is possible I may be wrong, but the notes may be taken for what they are worth.

I have already published a case in the December (1891) issue of the Journal.

I have always noticed the same symptoms. For a time the presence of the larva does not cause any appreciable trouble to the horse, for the ovum is deposited in the late summer or autumn, and no disturbance is noticed until towards the spring, though the larva must be all this time in the skin; but when it begins to grow rapidly, and to give off the irritant material that induces the slight suppuration in which it finds its sustenance in its normal host, the ox; this secretion acts as a poison to its accidental host, the horse.

It is a fact well known to naturalists that the larvæ of parasitic insects have the power of secreting such an irritant; and a very useful lesson may be learnt as bearing on the point. I wish to impress on your readers, by a reference to the vegetable kingdom, and a study of the "galls" and the so called "gall flies"—

There are several kinds of these hypertrophies found on the oak-tree to which we will limit ourselves, of a variety of shapes and sizes:—

The large soft mad-apple oak-gall (caused by *Teras terminalis*) found towards the end of May.

The hard round marble-gall (caused by *Cynips Kollari*) of commerce, mature in September.

The soft round green and red galls (caused by *Dryophanta scutellaris*) on the under surface of the leaves, and likened by some to cherries, falling and ripening with the leaves in October and November.

The beautiful "spangle-galls" (caused by *Neuroterus numismatis*) almost resembling small fungus growths on the under surface of the leaves, and also falling with them.

The "cotton-galls" (caused by *Andricus ramuli*) resembling a bunch of cotton-wool packed closely together, and mature in June and July.

The artichoke-gall (caused by *Aphilotrix fecundatrix*) resembling that vegetable in miniature, and mature in August and September.

The beautiful bunches of "currant-galls" (caused by *Spathegaster baccarum*) hanging from the catkins of the oak, and mature towards the end of May, and several others.

The insects causing each of these "galls" have many points in common; they all belong to one family, the Cynipidæ; how then are we to account for this diversity in the shape and character of the growths?

The mother insect is supplied with a beautiful and wonderful instrument for piercing the young bark of the tree, in the situation where the young larva, when hatched, will eventually find the nourishment it needs, in the sap of the tree; and in the wound so made by her she deposits her egg. Until quite recently it was supposed that she deposited a minute spec of an irritant with the egg, but the recent researches of Professor Adler appear to prove that when the larva leaves the egg, it has the power of secreting a something which arrests or diverts the flow of sap around its habitat, and this induces the formation of a hypertrophy or "gall," in which, in some cases, a single larva, as in *Cynips Kollari*, and in others numbers of them, hundreds sometimes, as in the mad-apple and cotton-galls, live and grow and eventually pupate.

But our point is, how different must be the character of the minute spec of irritant secretion of each kind of larva, to produce such a variety of forms of growth! And a study of the methods of insect life in this light enables one to account for phenomena caused by parasitic insects other than those that attack trees.

There is much more in the life-history of "gall-flies" that would be found instructive and intensely interesting to the student of pathology, as, for example, their alternation of generation, but this would be out of place here.

For all that theorists have said and written to the contrary, the presence of the larvæ of the Hypoderma bovis, do not interfere materially with the health of their normal host, the ox, they are, in fact, known by the name of "proof worms" —and are regarded as a sign of the "bearer" being a "good doer." Their emitted secretion causes slight suppuration in the sub-cutis of their normal host, in which they are found in great numbers—(I say nothing of the harm done by them to the hides, which is enormous, but of the effect of their presence in the skin of the living ox)—but this same secretion acts as an irritant poison in the system of their accidental host, the horse, where I have never found more than one or two.

In the cases that have come under my notice (always between the months of January and May), I have invariably found the same symptoms.

First, before there is any local manifestation, there is a rise of temperature, and great constitutional disturbance, then, after about four-and-twenty hours or so, there appears a hard, very painful swelling, which the horse cannot bear to be touched, and, in my cases, always in the region of the wither, just in front of the shoulder.

Careful examination will reveal the small breathing aperture of the insect, in the skin—once seen, always easily recognised again. To remove the "grub," this is slightly enlarged, and pressure applied, when the larva is expelled. I would warn practitioners that it is essential that this opening should be first enlarged and by a blunt-pointed bistoury, for if the grub is killed by squeezing or cutting, and any of its contents escape into the sac, if, in fact, it does not all come clean away, it causes trouble for weeks and months after, by the formation of an occasional small abscess.

It is my experience that the larva is only found in horses that have been turned out in the summer (when the mature fly is on the wing) either with cattle, or on land adjoining their pasture, and I have always regarded it as an accidental infestation by an abnormal parasite.

The enquiry is for the Imago or perfect fly. It has not yet been identified, and, if I am right in my conclusions, it never will be, because its abnormal host cannot bear it to the full stage of larval development.

I had a mare of my own which I found to be affected in January, 1894, and I hoped I might, through her, be the fortunate possessor of a mature fly, and for this purpose it was my intention to leave the larva for development, but the swelling became so large, and so excessively painful, and the poor mare was thrown so much out of health, that I was compelled to relieve her. From her symptoms I should imagine that in a case of non-interference nature would throw off the offending parasite by suppuration long before it reached maturity.

I have pleasure in forwarding the larva I took from my mare, which I fortunately preserved, for Professor McDougall's acceptance. There is also a broken larva I took from another horse, in which I had afterwards the untoward symptoms I have mentioned.

Editorial.

A HIGH-HANDED PROCEEDING.

I HAVE some hesitation in bringing before the readers of the VETERINARY JOURNAL a matter which may seem to be to a certain extent a personal one. My excuse must be that what concerns a part of the veterinary body in reality affects the whole, if there is to be any true *esprit de corps* among us; still more must this be the case when the training of the young generation is concerned, because an injury done to the youth of the country may go on, in process of time, to become a national disaster. My case is briefly this: The New Veterinary College and the Glasgow Veterinary College admitted students on the understanding that if they presented certain educational certificates recognised by the Royal College of Veterinary Surgeons, such certificates would be accepted as evidence of fitness, no matter whether they had all been obtained at one time or not. I now learn that the Dick Veterinary College acted under other instructions, a letter to the effect that the certificates must be all obtained at one sitting having been sent by Mr. Hill, the secretary of the R.C.V.S., to Mr. Mettam of the Dick College on 3rd October, 1894. It is to be presumed that the Royal Veterinary College, London, acted under similar instructions to those sent to the Dick College, as it was stated by Mr. MacFadyean that students were not admitted to that college unless they had obtained all their certificates at one sitting. (I may here mention that Mr. MacFadyean's statement was contradicted at the meeting of Council on 4th December, 1895.) On 23rd November, 1894, that is, eighteen days subsequent to Mr. Hill's letter to Mr. Mettam, Mr. Rutherford, the Scottish Secretary, received instructions to accept educational certificates prior to the first professional examination, and he was told that "it does not matter to the Council how or when they were obtained." Students were consequently admitted to the New Veterinary College, Edinburgh, and to the Glasgow Veterinary College on these terms. On 23rd November, 1895, the following copy of a minute passed by the Examination Committee of the R.C.V.S. on the previous day was sent to Mr. Rutherford, viz., "That the secretary of London and Edinburgh be instructed not to accept in future any educational certificate, unless it embraces the necessary subjects, as specified in the first schedule, and unless all the subjects were passed at one

time." This, of course, caused a good deal of consternation and led to a considerable amount of correspondence, it being felt that a door was thus being opened for actions at law against the principals of the two Scottish Colleges and by them against the Council of the R.C.V.S. I maintain that the Committee had no right to endeavour to thrust such a resolution upon us; the very attempt to do so was a plain violation of the regulations laid down by all committees and councils known to me. It appears that the motion was made in the committee by Mr. MacFadyean, and seconded by Mr. J. A. W. Dollar, but as Mr. Dollar was not a member of the committee, his seconding was pronounced incompetent by the chairman. Are we to suppose that this was a mere mistake on the part of Mr. Dollar, due to his youth and inexperience? The President of the Council, who was present at the meeting of the committee, voted against the resolution, and declined to accept a particle of responsibility therefor. Notwithstanding all this, the resolution was passed, and then, to prevent further difficulties, the President of the Council at once called a special meeting, to be held on the 4th December, that being the first possible day on which it could be legally held. Let it be noted that this day was likewise the last day on which students' examination fees could be accepted by the Scottish Secretary. Mr. Rutherford had, therefore, to trust to the telegraph for instructions at the last moment. Fortunately, the difficulty was overcome, and the attempt on the part of the committee to dictate to the Council, and through it to the schools, was rendered abortive: but the risk was much too serious, and the possibility of harm being done to students and teachers, as well as to the whole body corporate, much too great to permit me to pass the matter over in silence. I make no further comment, and leave the readers of the Journal to form their own opinion as to the motives which prompted the conduct which I have described.

THE VETERINARY CONGRESS AT BERN.

[In answer to enquiries we have to state that *Rauschbrand*, as mentioned in our first notice of the Congress, which appeared in our November issue, is the German name for the disease in swine known in France as *Charbon symptomatique* and in England as *symptomatic Anthrax*, or Black-leg.—Ed. V. J.]

WE continue our report of the Congress, abridged from the

very full and excellent report given in the *Berliner Thierärztliche Wochenschrift*:—It was unfortunate that the long and prolix debate on tuberculosis had made such demands on the patience of the members, but it was quite natural that after a sitting of eight hours there should be unmistakable signs of weariness, and that when the voting on tuberculosis was finished the members should with one consent make for the door of the hall. The consequence was that a very important Report by the anatomical section of the Congress was forgotten or neglected by the majority of the members, about three-fourths of whom had left before the report was read. This report explained that the German Anatomical Society had, some years ago, undertaken the publication of a new anatomical nomenclature for general adoption. It was most desirable that the veterinary profession should follow this example, as a great deal of laxity and uncertainty—even incorrectness—prevailed in their anatomical nomenclature. It was likewise desirable that a Latin nomenclature, to be used by all veterinary surgeons throughout the world, should be prepared, and it was thought that the sitting of the Congress was a good opportunity for arranging the matter. It was agreed by the Congress, after hearing the report, as follows—(*a*) That the Latin nomenclature adopted by the German Anatomical Society for human anatomy, should be adopted as a basis for international veterinary purposes; (*b*) That the adaptation of the nomenclature to veterinary anatomy should be undertaken by a committee chosen from among the members of the Congress then present, with power to add to their number—the work to be suitably divided, and two conveners to be appointed to systematize the work; (*c*) That, a year before the next Congress (to be held in 1899), a meeting of the committee (to be called the Veterinary Anatomical Commission) should be held in some neutral place to be chosen by the conveners. All proposals made by the Commission will be published in the veterinary journals and sent likewise in a printed slip to all veterinary teachers, with the request that they will give an opinion distinctly for the one or the other proposed form in the event of there being concurrent forms; (*d*) That the final settlement of the form to be adopted by the veterinary profession should be made by the votes of the Commission. The following members were chosen to form the Commission, viz., Arloing (myology), Lorge (respiratory and digestive organs), Martin (neurology), Müller and Ellenberger (osteology and

syndesmology), Rubeli (organs of sense), Schmaltz (urino-genital organs), Sussdorf (vascular system), also Dr. von Czako, of Budapest. The work has thus been entrusted to German and French-speaking members; but, doubtless, surgeons of other nationalities will give in their adhesion. A motion was brought before the last full meeting of the Congress, by the convener of the anatomical section, to the effect that the expenses of the Anatomical Commission be paid out of the funds of the next Congress, and this motion was accepted without dissent, the members being, in truth, averse to all further discussion. This brought the business of the Congress to a close. The settlement of the next meeting-place was deferred to an informal meeting, which was to take place at Interlaken, whither the members were to make a pleasure trip. It may be here stated that the place fixed upon was Baden-Baden, and the year 1899.

It would be ungrateful to pass over without special mention, the courtesy and civility shown by the Swiss surgeons to their visitors. Everything was done to make the visit of the members an agreeable one, and special thanks are due to Professor Rubeli for his labours in finding house-accommodation for the visitors—no easy matter, as an agricultural show was going on in Bern at the same time. The members had an opportunity of visiting the Veterinary Institute in Bern, which, lately restored after being burnt down, is a model of what a veterinary school ought to be. In the Institute, the members had an opportunity of seeing Professor Degive, of Brussels, perform, with inimitable grace and dexterity, an operation upon a cryptorchid.

The festivities at Interlaken were of the most enjoyable kind, and were attended by about 150 members of the Congress, some of them accompanied by their wives. The Swiss surgeons were most cordial in their hospitality, and welcomed their foreign brethren very heartily to this beautiful part of their romantic and picturesque country.

If we were to summarise our impressions of the Congress we should say that everybody seemed to be thoroughly pleased. These international meetings, at which the best men of all countries assemble to measure their strength with each other, and to concert schemes for mutual benefit, are of great and abiding importance. It is of the utmost utility and extremely interesting to come into personal contact with eminent men from foreign countries and to learn to respect them; it stimulates effort on the one hand and curbs vanity and conceit on the other. The Congress was attended

by a great number of men of the highest rank in the scientific world—men of acknowledged merit—and the debates have undoubtedly contributed to the clearing away of doubts on troubled questions, and are destined, we are sure, to bear valuable fruit in the immediate future.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL COUNCIL MEETING.

A SPECIAL MEETING of Council was held at the College, 10, Red Lion Square, London, on Wednesday, Dec. 4th, 1895, to consider communications from Principals of Schools in regard to threatened proceedings concerning educational certificates, and to receive counsel's and solicitor's opinions, and to decide thereon.

The PRESIDENT (Mr. J. F. SIMPSON) was in the Chair, and the following members were present:—Gen. Sir Fk. Fitzwygram; Professors Edgar, McCall, McFadyean, Penberthy, W. O. Williams, and Williams; Messrs. Abson, Barrett, Beddard, Dollar, Fraser, Hunter, Hunting, Kidd, Mason, and Mulvey; and Mr. A. W. Hill (Secretary), and Mr. Geo. Thatcher (Solicitor).

The minutes of the last meeting having been read and confirmed,—

The PRESIDENT, in opening the subject which the council had been called to discuss, said that there appeared for a long time to have been considerable doubt in the minds of Secretaries—certainly in the minds of the Scotch Secretaries and the Principals of Schools—as to whether it was necessary that a student who presented himself for his A examination should produce certificates granted by certain bodies to the effect that he had passed certain subjects which the Council insisted upon, and further, that he should satisfy the Secretary of the College that the subjects had been passed at one and the same time. From correspondence which he (the President) would lay before them, they would find that what might be called partial, or divided, certificates had been accepted hitherto from some of the schools. The Secretary of the Scotch Examiners, acting for the College, desired now to be very clear upon the subject. On October, 1894, Mr. Rutherford wrote to Mr. Hill, asking whether divided certificates would be acceptable to the College; and Mr. Hill gave him the opinion that the certificates could not be accepted if divided. The matter was then laid before Mr. Hunting, then President, together with the Secretary's opinion, that it must be at one examination. In reply Mr. Hunting wrote: "*Re* Mettam, the Council decided to accept the certificates mentioned in our list. If the educational bodies give the certificates, it does not matter to us how they were obtained. I know no published rule of ours saying they must be passed *en bloc*." That was the letter which appeared to have guided Mr. Rutherford, and it was for the Council to say whether it conveyed the meaning that divided certificates would be accepted. On October 25th Mr. Hill wrote, as instructed by Mr. Hunting, to the Scotch Secretary. The present question had arisen owing to Mr. Hill having, on the 19th of last month, written to Mr. Rutherford, refusing a certificate, and stating that all the subjects must be passed at one time. To this Mr. Rutherford replied on the 28th that this last instruction traversed his previous instruction of October 23rd, 1894. He also wrote to the President (Mr. Jas. Simpson), pointing out that the authorities of the Dick and New Colleges knew of no such order, and that,

as their students had been expecting to go up on the instruction of Oct. 1894, already twice acted upon, it was unfair to make a new instruction now. He laid Mr. Rutherford's letter before the Examination Committee, and on November 22nd they resolved "That the secretaries in London and Edinburgh be instructed not to accept in future any educational certificate unless it embraces the necessary subjects as specified in the first schedule, and unless all the subjects were passed at one time." Professor Dewar also wrote calling attention to the letters of 1894, and stating that the present action might open up delicate and even legal questions. Professor Williams also wrote stating that the order issued was in direct violation of the arrangements on which the students had been entered. Mr. Rutherford also wrote stating that he had handed a copy of the new instruction to the Scotch Colleges, and the authorities of those Colleges were much put about at the instruction, calling it a "breach of faith" and "unjustifiable." Their legal adviser having given as his opinion that the educational certificates must be complete in themselves, and that two or more certificates relating to different subjects, although together covering all the required subjects, could not be accepted, he (the President) seeing that the matter was of considerable importance, asked to be allowed to take Counsel's opinion. Permission having been given, Mr. Morton Smith was consulted, and advised as follows:—"The Council can only act as provided by the bye-laws; and if the provisions of the bye-laws seem to work an injustice, the only remedy is to alter them, but until they are altered they must be followed strictly. Bye-law 52 and the first schedule must read together. The use of the plural 'certificates' in bye-law 52 does not affect the question raised in the case, because it is 'one of the certificates specified,' etc., that is to be produced. In order to decide the point raised, the schedule must be examined. and I consider that after such an examination, the true answer to the question put is as follows:—(1) That in all cases where a 'certificate' is mentioned, it means a certificate complete in itself, and which must include all the subjects specified in reference to such certificate. For sake of example I take No. 31, University of St. Andrews. A complete certificate of this body would have to be produced, and not two certificates showing a pass at two different examinations. (2) But I must point out that in cases where 'certificate' is not mentioned in the schedule, as in 40, 41, 42, and 49, then if the examining body allows the qualifying examination to be taken in two parts, the Council must accept a certificate showing a complete pass, although on the face of the certificate it shows that the examination had been allowed to be taken in two parts. (3) The only reference to plural certificates is in No. 39, but this case does not really arise in consequence of the Medical Council having required all the subjects to be included in one certificate." After reading this "opinion" the President stated that in a letter dated November 28th, 1895, Mr. Rutherford said he had no educational certificates presentable at the coming examination and would not have until he could ask for them when taking the fees. He stated the question at issue and added that two of the schools threatened serious proceedings if the instruction was adhered to. Mr. Mettam in writing to Mr. Hill on November 27th, said he had been informed that the Council had resolved not to accept educational certificates unless they embraced all the subjects and the subjects at one time, and expressed the hope that the Council would exempt from its provisions all applicants who might in good faith have begun their course of study under the old regulations. He referred to the instructions given in Mr. Hill's letter of October 18th, 1894, that the Council had decided to accept the certificates mentioned in the list and that if the educational bodies gave their certificates it did not matter to them how they were obtained. Since then the examining bodies

in Edinburgh had allowed students who failed in one or more subjects to come forward again and pass in those while getting credit for the subjects in which they had previously passed. The certificates granted in those cases had until now been accepted without objection and he submitted that the Council should continue to accept such certificates in the case of such students as had already begun their course on the faith of the regulation hitherto recognised. He hoped the Council would see the equity of this and act upon the principle accepted in legislation, viz., that such new rules should not be retrospective. The point was he added a serious one, as a considerable number of the Edinburgh students had commenced their course on the faith of the understanding and practice referred to.

Mr. HUNTING asked if the council had passed any such resolution as that mentioned by Mr. Mettam? As far as he remembered no such resolution had ever been passed.

Professor MCCALL said he had never heard of such a resolution.

The PRESIDENT proceeded to read a letter from Mr. Rutherford, of November 28th, enclosing copy of a letter from Messrs. Macgregor & Co., of Edinburgh, pointing out, on behalf of Professor Williams and the students and others of the new veterinary college, that the instructions of the Council that the secretaries in London and Edinburgh were "not to accept in future any educational certificate unless it embraced the necessary subjects, and also, unless the subjects are passed all at one time," would, if enforced at present, be a flagrant violation of the terms and conditions upon which many of the students had made preparations for joining the veterinary profession, and would also give rise to various claims for damages against the responsible parties. They pointed out that it was very unusual in any profession to pass a prohibitive law of that sort without reserving the rights and interests of parties who had been induced to commence their apprenticeship under the former rules. They also said that by the Charter of the College the Council were not entitled to make any new Order, Rule, or Bye-law. or to repeal an existing one without three months' notice, and a special meeting being called to confirm the same, and that as the alteration of the rule by the Committee was *ultra vires*, Mr. Rutherford would be held liable in damages, and other consequences resulting, if he insisted on giving effect to the instructions by refusing to accept certificates of students who had made arrangements under the former rules. After reading the letters, the President said that as time was running very short he had instructed the Secretary to call that special meeting of the Council. Bye-law 56 would really make it illegal for Mr. Rutherford to collect fees after that day (December 4th), and he thought by summoning the Council at once and getting their decision he could telegraph full instructions as to the certificates that afternoon.

Professor MCCALL said Mr. Rutherford was due at Glasgow at two o'clock that day to receive the fees.

The PRESIDENT said it had occurred to him that the fees might be accepted under protest, and he had written to Mr. Rutherford to that effect. These were the facts of the case, and it was for the Council to come to some conclusion, which might be at once telegraphed to Mr. Rutherford. It was a matter of very great importance, for he did not know where it was likely to end if they now declined to receive those certificates. If they insisted upon that course, it was a question whether or not they must declare the examination of students who presented such certificates last Christmas that way null and void.

Professor MCFADYEAN asked whether a letter had been received from the Royal Veterinary College, requesting that the matter might be submitted to that meeting.

The PRESIDENT said Mr. Powys had written stating "that at the pro-

fessional preliminary examination held by the College of Preceptors on September last, some of the candidates who had since entered the College as students passed in a portion of the obligatory subjects, but not in the whole of them. The College of Preceptors are holding another examination very shortly, and I should feel greatly obliged if you could ascertain from the Council of the Royal College at their next meeting whether it will comply with their requirements in regard to general education, if the students to whom I referred are able to satisfy the examiners in those subjects in which they failed in September, now, or at any subsequent examination of a similar nature that the College of Preceptors may hold. Perhaps you will kindly let me have a reply to this at your earliest convenience as it is naturally a matter of considerable importance to the students whom it may effect."

Mr. HUNTING thought the letter had a most important bearing on the subject.

Professor MCFADYEAN asked whether the case of students whose certificates had to be accepted or rejected now was governed by the bye-laws of 1894 or 1895? The students who entered in 1894 were governed by the rules in force then.

The PRESIDENT: Certainly: the bye-laws of 1894.

Mr. HUNTING said he would like to point out two rules in the 1894 bye-laws. One was, "That the students shall produce a certificate that they have passed the preliminary educational examination in force after January 1st, of the General Medical Council, and produce an educational certificate recognised by that body." That rule was not in force now, and the Council were going to complicate matters if they allowed it to be brought in. Then regulation 23 said, "That certificates admitting students to any of the Veterinary Colleges without educational examination be lodged with the Secretary;" and that rule was not in force now. Those regulations had been left out by some accident from the bye-laws.

Professor MCFADYEAN said the whole contention was, that a student was induced to join under the regulations in force in 1894. The bye-laws might have been altered since then. Assuming that the 1894 bye-laws regulated the procedure, was the case of those students governed by the bye-laws in force when they entered, or in force when they presented the certificates? In fairness, it should be the bye-laws in force when they entered.

Mr. BARRETT: Certainly. He took it that the bye-laws of 1895 would not come into effect until January 1st, 1895, and therefore students entering in 1894 would be amenable to the bye-laws of 1894.

Mr. HUNTING submitted that the College knew nothing about a student until his first examination.

Professor MCFADYEAN said that thirty weeks study was imposed upon him before that.

The PRESIDENT said the Council had considered students in that way, and intimated that certain alterations would not apply to students entering the schools.

Mr. HUNTING said the Council had gone out of its way to make a special bye-law for such cases.

Mr. J. A. W. DOLLAR asked if the Council did not recognise a student until he presented himself for his first examination, why was it that the new bye-laws were preceded by a clause saying that the bye-laws relating to the four year's scheme should not apply to any student who entered before a certain date?

Mr. HUNTING said that was the exception which proved the rule.

Mr. BARRETT submitted that the moment a student was registered the Council exercised control over him, and therefore he was governed by the bye-law in force at the time he entered.

Professor McCALL said the student was registered in the school and not in connection with the College. He thought counsel's opinion was largely based on the fact that the examinations were being conducted under the General Medical Council. Professor McFadyean had taken very great care to expunge that part of it, and the examinations were not being so conducted.

Professor McFADYEAN said he took no such care, and if Professor McCall would look in the schedule he would find it mentioned there.

Professor McCALL read the regulation passed on the 7th September, 1893: "Students who enter the Veterinary Schools shall, prior to the first professional examination by the R.C.V.S., produce a certificate that they have passed the preliminary general educational examination in force after 1st January, 1892, of the General Medical Council, or produce an educational certificate recognised by that body to the Secretary of the R.C.V.S." He maintained that Professor McFadyean was the very individual who, when the Council were going over the regulations a year ago, expunged the words "General Medical Council."

Professor McFADYEAN said that it stood at page 74 of the 1895 bye-laws.

Professor McCALL said that not one word was mentioned of the Medical Council.

Mr. HUNTING said that Mr. Morton Smith, in his opinion, stated that there was only one clause in the bye-laws, No. 39, mentioning the word "certificate" in the plural, whereas there were two, Nos. 39 and 50.

Professor McFADYEAN said that one governed the other. There were leading certificates in each grade and in honours, and, therefore, the plural had to be used in No. 50.

Professor WILLIAMS said the leading certificates could not be obtained at one time; they were part certificates.

Mr. BARRETT pointed out that, by the resolutions of the General Medical Council, the certificates comprised in the first schedule were not required to be passed at one and the same time.

Professor McCALL said that until the 23rd November he did not know there was any attempt by anyone to call in question the legality of the examination of students by the bodies that had been constituted for that purpose. Hence, when he issued the prospectus of his college he intimated, according to the regulations of the R.C.V.S., that the examination could be conducted at any time prior to the student presenting himself for the first professional examination, but he did not say that students must pass that examination all at one sitting. He held that a student had a claim upon him for admission to the first professional examination if he could produce a certificate, and certainly if the student had a claim against him, he (Professor McCall) had equally a claim against the College. He had had no communication that such a method of passing the examination could not be received. Was it needful that the College should be very stringent in the admission of students into the profession? He had received a letter from Dr. Morrison, a gentleman recognised in Scotland as one of the first educationalists, a man who conducted the examinations, with Dr. Mackay, for the Educational Institute. The letter was as follows:—

22nd December.

Dear Professor McCALL.—Referring to our conversation this forenoon, I have no hesitation in giving it as my very decided opinion, based on a somewhat long experience, that to require veterinary students to pass the whole preliminary examination at one time is educationally a mistake. It stands, I think, to reason that a young man will derive more benefit from concentrating his attention on one or two subjects at one time than by dissipating his efforts on all the subjects required at the examination. I have consulted many of my professional brethren, and their unanimous verdict is in favour of my contention.

Professor WILLIAMS requested that the minute of the Educational Committee might be read.

Mr. HUNTING submitted that the Council had nothing to do with the Committee.

Mr. MULVEY, as Chairman of the Committee, pointed out that the resolution of the Committee was not intended to be sent to the schools, but was simply for the guidance of the President.

The PRESIDENT: That is incorrect. He read the minute as follows: "That the Secretaries in London and Edinburgh be instructed not to accept, in future, any educational certificates." That was an instruction which was carried out by the Secretary.

Professor EDGAR asked if any resolution, which any committee might pass, override the bye-laws.

The PRESIDENT: Certainly not.

Professor MCFADYEAN said he was the mover of the resolution, and he would not attach to it any greater weight than that which attached to the individual expression of opinion given by the late President in October, 1894. It did not override the bye-laws, but was an attempt to interpret them.

Mr. HUNTING said that the Council were more or less bound by the official letter.

Prof. MCFADYEAN said he never heard a more monstrous proposition than that a letter written by an official of the Council, interpreting a bye-law, was actually to petrify that interpretation and make it law. Divided certificates had been refused in London, and thereby there had been a considerable loss in fees. The Scotch colleges professed a desire to be governed by Mr. Hunting's interpretation of the law, when he was President, but the London College had no knowledge that any such interpretation had been given. There were two important questions to be considered. He would take the least important first, which was, that even-handed justice should be done to the various schools. Everybody knew that in London, since the new regulation regarding the higher preliminary examination came into force, divided certificates had not been accepted. The London College considered that it must be an educational certificate, entitling to registration as medical student. He heard with amazement that Professor McCall, who was a Member of Council at the time the new regulations were passed, remained in ignorance of the fact that an attempt, and it was supposed a successful one, had been made to put the general education of the veterinary student on a level with that of the medical student. It was clear that if the Council were going to decide now that students at present in the schools in Scotland, were to be admitted to the examinations with divided certificates, they were about to perpetrate an act of injustice on the London School. Further, it would not meet the case if the Council decided to strain at the law, and let those students up at present, although they were not quite satisfied that their certificates were all that the law demanded, because a similar claim might be made with reference to the students who joined last October. If divided certificates were legal in Scotland, the London School not only asked that it might be allowed in England, but insisted on its being allowed. The second point was, was the examination according to the interpretation which the London School placed upon the bye-law—that was, that it must be the same grade as that exacted from the medical students—too high? That was the point the Council had met to discuss. Although it might even be shown that there would be a great falling off in the number of students coming up for the examinations, that would, perhaps, not be a conclusive reason for reverting to the old system of examinations; but it had not been tried long enough yet, and he had no apprehension whatever but that the profession would be amply recruited while the examination remained as high as it was intended to be by

the Council. He begged to move, "That the Council decides to interpret the bye-laws relating to general education in the sense of the Medical Council."

Prof. EDGAR seconded the motion. He said he believed it was the intention of the majority of the gentlemen who worked the matter out, that the standard of examination should be raised, and maintained at the level of that required by medical students. If the piecemeal examinations suggested by the Scotch schools were to be permitted, it would mean that a student of the most moderate attainments might struggle through every subject, one by one, until he could claim to be registered as a veterinary student. The bye-laws were so clear upon the subject, that one of the leading veterinary schools had acted upon them, and now the Council were asked to make relaxations for those gentlemen who had not been at the pains to place a correct interpretation on the bye-laws. He thought it was ill-advised for the schools to threaten legal proceedings if the Council attempted to carry out the bye-laws.

Sir FREDERICK FITZWYGRAM said he was strongly in favour of a higher standard of education, and of keeping it up to the requirements of the bye-laws. It was not a question of whether that bye-law was wise or not, but simply a question whether, under particular circumstances, it would be wise to strain the powers of the Council, and reject certificates under which—wrongly, he thought—though innocently, students had been admitted into the veterinary colleges. It could not occur again, because the bye-laws were perfectly clear. He therefore moved, "That the Council will not impose the strict terms of the bye-law regulating the educational certificates in the case of students who have already been entered as students of a veterinary school."

Mr. HUNTING seconded the amendment. Professor McFadyean, he said, had mixed up intentions with fact. He agreed that it was the intention of the Council that their matriculation examination should be equal to that of the medical profession, and he always thought it was equal; but when he looked over the bye-laws he found that some clause or another had been missed out, and that the bye-laws did not express the Council's intention. In saying that the interpretation of the bye-laws was clear as shown by one school having interpreted them, Professor Edgar was guilty of a fallacy. Surely the other argument, that three schools interpreted them in another way, was much stronger. With regard to Mr. Morton Smith's opinion, it was not like the law of the Medes and Persians, and when he stated that there was only one clause which did something or other, and there turned out to be two, he (Mr. Hunting) did not know that very much value should be put upon that opinion. There was something else besides law and logic to guide men in this world, and that was expediency. Certainly, the expediency just then was in favour of not stopping students and raising discords among the profession and the schools. He held that, whether the action taken at the professional examination was right or wrong, or whether the opinion of Counsel was right or wrong, it was right and expedient for the Council at the present time to telegraph orders to the secretaries to follow the arrangements that had been in force up to the present time. If the bye-laws required to be altered, and he held they did, let the Council set to work and alter them by giving three months' notice.

Mr. DOLLAR said that practically the position could be crystallised in a very few words. There were certain bye-laws, regulating examinations, which might he interpreted in one or two ways. The bye-law might be interpreted so as to make the preliminary examination equal to that of the General Medical Council, or the Council might accept a debased certificate. But no exceptions could be made to the bye-laws. Sir Frederick Fitzwygram's proposition was that the Council should have a hard and fast bye-law, making their examination equivalent to that of the General Medical Council, and that

on all ordinary occasions the Council should adhere to that bye-law, but that by some mental process which he was rather inclined to place under the category of "expediency," the Council should on that particular occasion deviate absolutely from the line which they had laid down for themselves, and should recognise a "debased" certificate. If that was the highest opinion on the legal question which Mr. Hunting could submit, then he thought the Council would not regard him exactly as a high legal authority. Even in the event of the Council coming to the conclusion to allow the students to go on with their studies, the Council would be acting *ultra vires*. The Council must be bound by what they had done in the past. They had passed certain bye-laws legally, and if it was their intention to have an examination in the future which should qualify the men to stand on the same level as the men passed by the General Medical Council, then they could make no concession, and, if they did make a concession, they would be acting beyond their powers. Either the Council must have a high and a proper examination, or by their present action so interpret the bye-law that they would be for ever afterwards bound by it.

Mr. HUNTER asked whether anyone could give a certain answer to the question as to whether the examination of the Medical Council was taken in one or not, and whether it should be called a debased examination if it was passed in more than one sitting. He did not see that the standard was very much lower if the examination was passed twice.

Mr. BARRETT said he had with him the resolutions of the General Medical Council for 1895, and to his mind it was perfectly clear that the certificates comprised in Sections I. II. and III. might be passed at different times piecemeal, but that certificates in Section IV. must be passed at one and the same time. The subjects comprised in the first schedule of the *Veterinary Register* were for the most part those comprised in Sections I., II., and III. of the General Medical Council, and therefore those subjects need not be passed at one and the same time. A certificate was presented to the Council and they were bound by the bye-law, and the bye-law of the General Medical Council to accept it, and had no right to inquire how it had been obtained. Everyone was saying, Why should we accept a debased certificate? He submitted that the Council aecepted a certificate which was equivalent to that required by the General Medical Council in asking veterinary students to obtain those certificates. By asking them to pass subjects at one and the same time, they were asking them to do very much more than they were required to do by the General Medical Council.

The PRESIDENT said it certainly seemed to prove that the General Medical Council had arrived at the conclusion that it was hardly wise to keep on insisting upon all the subjects being passed at one and the same time, and they had made an alteration from the 1892 regulations in consequence. No member of the Council had any right to talk about the certificates comprised in the first schedule as being debased certificates. The Council had no right to ask how the student got the certificate, they had merely to examine the certificate, and, having satisfied themselves that it had been honestly obtained it was their bounden duty to accept it. Bye-law 52 did not say anything about the examinations being passed piecemeal, and nothing as to the mode of obtaining a certificate. He submitted that the Council as a body had almost entirely misinterpreted the resolutions of the General Medical Council. He would submit as a second amendment, "That in the opinion of this meeting the certificates comprised in the first schedule of Bye-law 52 be accepted as a sufficient educational test irrespective of the mode in which such certificates have been obtained."

Professor MCFADYEAN said that the amendment just proposed was incompetent without three months' notice.

The PRESIDENT said that in face of the resolution of the Council of October, 1894, which stated that there should be no partial or divided certificate, it would be necessary to give three months' notice.

Mr. HUNTING said the resolution of 1894 was not in force, and was wiped out when the bye-laws were altered.

Mr. BARRETT said it was illegal if it was in force.

The PRESIDENT said Mr. Hunting was quite right, so that the amendment was in order.

Mr. BARRETT said that why he objected to Sir Frederick Fitzwygram's motion was that he evaded the difficulty of asking the Council not to put too strict an interpretation on the bye-law. He (Mr. Barrett) thought that was the very thing the Council should do. He thought they should adhere to the bye-law.

Professor WILLIAMS thought that the bye-laws applicable to the students who entered last October were those bye-laws which were made previous to October, that was, during July, 1894, although they were not published till the commencement of 1895. A great deal had been said about the higher educa tion and about debased certificates and that sort of thing, an argument which he thought totally unworthy of an assemblage like the Council. If a man obtained his knowledge, whether he obtained it at one time or two or three times, that man was equally as good as the man who obtained it at one time. He was very much surprised to hear Professor McFadyean say that the regulations of the Medical Council had nothing at all to do with the matter, when Professor McFadyean was the man who did his level best to delete that resolution. He had no hesitation in saying that it was a sort of compromise between Professor McFadyean and Professor McCall, that "if you back me in my application for a summer session, I will support you in doing away with the regulations of the Medical Council."

Professor MCFADYEAN emphatically denied that statement.

Professor MCCALL said he remembered distinctly Professor McFadyean asking him whether he would consent to a summer session, and he (Professor McCall) said to him, "I have no desire to dictate to you how you should conduct your college here, and I hope you will allow us to conduct our own. Speaking for myself, I do not wish for any summer session."

Professor MCFADYEAN denied the language given expression to by Professor McCall.

Professor WILLIAMS said the proceedings of the Committee, and even the very fact of the Council having been called together, were totally inconsistent with the resolutions upon which the Council had acted. He, therefore, simply moved the "previous question."

Mr. FRASER seconded Mr. Barrett's amendment. He wished to deliver himself from the imputation that he consented to lowering the standard of the educational examination. If a lad was examined to-day in arithmetic, three months later in algebra, and three months afterwards in geometry, did it follow that he was any the less qualified than a man who passed the whole three in one day?

Professor PENBERTHY: Yes.

Professor MCFADYEAN: Certainly.

Mr. FRASER said that, in his opinion, it was superior to an examination passed at one time. If the Council really did believe that examinations were of greater value when passed at one time, they should insist on the scientific examinations being passed at one time.

Mr. MULVEY asked whether the educational bodies mentioned in the schedule gave a single covering certificate, or did they grant more? If so, did the Council accept a number of certificates as covering all the subjects laid down, or did the Council demand one certificate?

The SECRETARY said he never accepted two certificates.

Mr. HUNTING: Has he ever had two offered to him?

The SECRETARY: No.

Mr. DOLLAR said that in his speech he did not wish to accuse any one certificate of being a debased certificate, or point out any other one which was exclusive, but he wished to bring before the Council the fact that the Council were bound by certain bye-laws which they themselves had made, and that they could not legally depart from those bye-laws.

Mr. KIDD supported Mr. Barrett's amendment. He said he was one of those who strenuously supported the higher standard of education, and from that he did not recede; but the Council had always tried to deal fairly with the students and with the schools. When the standard of the professional examination was raised, the Council gave a certain number of years to prepare the schools and the students. He thought the same thing should be done with the educational examination.

Mr. HUNTING said he should like to withdraw from seconding Sir Frederick Fitzwygram's motion. After what had been said, he intended to vote for Mr. Barrett's amendment.

No one seconding Sir Frederick Fitzwygram's amendment, it dropped.

Professor WILLIAMS withdrew his amendment in order to vote for Mr. Barrett's.

Professor MCFADYEAN asked whether Mr. Barrett's amendment, if carried, would enable a student who could not register as a medical student to register as a veterinary student.

Mr. BARRETT: No.

Professor MCFADYEAN said that did not dispose of the difficulty. He would withdraw his motion if he felt assured that the amendment by Mr. Barrett would not have the effect of lowering the standard of education.

Professor MCCALL said that Professor McFadyean had an advantage which no other veterinary school had, and he would never have had that advantage if the Medical Council had not been expunged. The matriculation examination took place at times to suit Professor McFadyean, the students were examined at his own institution, and he knew every man who went up for examination, and whether he had passed or not, immediately. In Scotland they were kept three weeks before they knew whether students were admitted. If Professor McFadyean wanted to do the right thing he should have no examinations held in his college.

Professor MCFADYEAN: Every one of those statements are wrong.

Professor MCCALL: They are not. Are the students examined in your college?

Professor MCFADYEAN: With that exception.

Professor MCCALL: Then I am right.

On Mr. Barrett's amendment being put, it was carried, eleven voting for and seven against; and on being put as a substantive motion, it was carried.

At the request of Professor MCFADYEAN, the names of those voting in the minority were taken down. They were Sir Frederick Fitzwygram, Professors Edgar, McFadyean, Penberthy, Messrs. Dollar, Mason, and Mulvey.

On the motion of Mr. HUNTING, it was resolved to telegraph the resolution to Mr. Rutherford in Scotland, with the addition of the words, "Accept certificates as before."

Notice of Motion.

Professor MCCALL gave notice that he would move, "That the educational examination of veterinary students shall not be conducted within the Veterinary College, but within the premises of the Institution granting such certificates."

A vote of thanks was passed to the President, and the Council adjourned.

WESTERN COUNTIES MEDICAL VETERINARY ASSOCIATION.

THE 22nd meeting of this Association was held at the Globe Hotel, Plymouth, on Thursday, October 17th, Mr. C. H. Golledge, Sherborne, occupying the chair. The members present were Messrs. W. H. Bloye, F. P. Collings, P. G. Bond, Plymouth; W. Ascott, Bideford; F. T. Harvey, St. Columb; G. H. Elder, Taunton; A. H. Oliver, Devonport; G. H. Gibbings, Tavistock; F. Clunes, and A. E. Michel, St. Austell; J. P. Heath and W. B. Neelder, secretary, Exeter. Mr. Dunstan, St. Mellion, was present as a visitor.

Apologies for non-attendance were received from Messrs. Olver, Place, Penhale, Chase, and Howard.

The minutes of the last meeting were read and confirmed.

Nominations.

Mr. S. L. Stephens, Wadebridge, nominated by Mr. HARVEY, seconded by Mr. OLIVER.

Mr. Dunstan, St. Mellion, nominated by Mr. GIBBINGS, seconded by Mr. BOND.

Mr. Hutton, Barnstaple, nominated by Mr. ASCOTT, seconded by Mr. HEATH.

Some Abnormalities incidental to Parturition in the Mare and Cow.

BY G. H. GIBBINGS, TAVISTOCK.

When I acceded to the request of our President to bring forward a subject for your deliberation and discussion I experienced a difficulty in selecting one to comply with the usual requirements, that is to be generally interesting and calculated to prove materially instructive. I anticipate the consideration of some of the abnormalities incidental to parturition will accord with these demands.

I disclaim all idea of originality, and my remarks will only embrace such cases as have fallen under my own personal observation.

The practice of veterinary obstetrics entails an intimate acquaintance with both the "art and science" of our vocation, "Art" to be an adept in manipulative dexterity, and scientific knowledge to combat the complications with which we are frequently confronted in a serious case. Only a very slight smattering of this subject can be acquired at our schools—no number of lectures, or even demonstrations from models, will render a student proficient in this complex branch of the profession; consequently if he has not had the good fortune to become conversant with this class of practice prior to his collegiate days, the knowlege has to be acquired after graduating, possibly in open competition with the experienced empiric, and it may be at the expense of his own reputation.

I will not weary you with a detailed account of the anatomy and physiology of the generative organs; it will be sufficient for my purpose just to mention that a difference exists in the disposition of the uterus in the cow and mare. In the former animal the concave surface of the cornua looks downwards towards the floor of the abdomen, whereas in the mare the opposite condition—to the lumbar region obtains.

In alluding to the abnormalities incidental to parturition it will be necessary to consider them in relation to the nature of the impediment or resistance *i.e.* whether maternal or fœtal.

Maternal Dystokia.

Abnormalities in connection with the pelvic bones.—Alterations in the dimensions of the pelvis from congenital malformation are not so frequent in our patients as in the human female. Occasionally I have observed in young lean heifers that the fœtus attains larger dimensions than the pelvis can

accommodate, delivery then is difficult; the calf sometimes divides, the hind quarters being retained, these must be either removed piece-meal or pushed back and extracted by the breech. In such cases I have witnessed instances where forcible extraction has produced irreparable mischief to the cow.

Accidental deformity arising from fractures and ossific deposits must also be mentioned as barriers to parturition; the latter I have noted as a prominent ridge at the symphysis, the calf was extracted after much labour, but the cow ultimately succumbed to the injuries inflicted. Animals that have sustained fractures implicating the neck of ilium so as to cause permanent lameness are sometimes bred from with safety, but I do not consider they should be used for that purpose.

Stricture of the Vagina.—In connection with the vagina of the cow one occasionally encounters a tight ligamentous band, the remains of the hymen. In one animal I attended, although the presentation was normal, I could not effect delivery until this fibrous structure had been divided by two lateral incisions.

Tumours implicating the vagina or adjacent organs sometimes obstruct the passage of the fœtus. Recently I was requested to visit a cow reported to be straining severely; the animal had lately aborted; urine voided at short intervals and in small quantity. On exploring the genital canal I detected a large growth in the bladder. The dimensions of this organ were increased to such an extent as nearly to occlude the lumen of the vagina.

Spasm or Rigidity of the Cervix Uteri.—I have never met with this condition in the mare. If not due to pathological alteration in the muscular stricture this affection is not serious, but the difficulty (except in pronounced cases) is to differentiate between this so-called functional disease and scirrhous, or induration of the cervix. I have never seen beneficial results follow the local application of the extract of belladonna. Mechanical dilatation has been successful; repeated and gradual expansion of the operator's hand will sometimes cause relaxation. It is not advisable to resort at once to surgical interference, but if after the lapse of forty-eight hours the os was not more dilated I should not hesitate to incise it.

Torsion of Uterus.—The general conformation of the cow's uterus predisposes her to displacement of that organ. Complete torsion of the viscus I have never encountered, but partial torsion is comparatively common. I shall briefly enumerate the predominant symptoms:—Labour pains are in abeyance or simulate the character of ordinary colic; the cow frequently backs; relaxation of pelvic ligaments, but no corresponding tumefaction of the external genitals; the vulva is rather puckered and retracted; no water bag visible. Exploration of the vagina reveals a series of spiral folds converging towards the floor of the canal; if the os can be penetrated by the fingers it is in a corkscrew manner, deviating either to the right or left; the pains rather constrict than dilate the os; the impediment to the circulation induces turgescence of the vaginal vessels.

Within the last six months I have encountered three cases of partial twist in the cow. At first I rather ridiculed the *rolling* treatment, as recommended by Dr. Fleming, but in these instances that method of procedure was successfully adopted. It may be necessary to execute three or four complete rotations before the uterus regains its normal position, but when this is accomplished the folds of the vagina are effaced, the os gradually dilates, and, given time, the fœtus would probably be spontaneously expelled.

Hernia of the Uterus (Ventral).—If suddenly developed, as from traumatism, I consider this very serious in the mare. An enormous swelling appearing in front and to the right of the udder is frequently the first intimation

the owner notes of the mischief. When the mammary gland descends with the ruptured muscular tissue a diagnosis is easy, but this does not always obtain, the nature of the tumefaction being concealed by the immense œdema. As soon as this is absorbed the fœtus can be manipulated and the rent is evident. This altered position of the uterus usually protracts delivery; occasionally the os does not dilate: expulsion efforts are feeble, rendering early assistance essential to preserve the life of the progeny. The pendulous uterus should be elevated by a sack or bandage, if this is not sufficient the mare may be cast and placed on her back. I have observed after this complication the womb does not contract and the mare's life is imperilled through accumulation of septic material. Every particle ot the placenta should be removed, the uterus thoroughly irrigated with an antiseptic solution, and support applied to the abdominal muscles.

Fœtal Dystokia.

Time will not permit of referring to the various diseases of the young creature that retard or protract delivery, neither shall I allude to those cases of dystokia comparatively easy of rectification, but only draw your attention to three mal-presentations constituting obstacles to parturition, viz., Anterior Presentation—Head and neck bent laterally; Transverse Presentation—The four legs presented; Breech Presentation—Hind legs completely extended under body.

Anterior Presentation.—Malposition of head. In this presentation, more particularly in the mare, the head is usually defective in conformation—a concavity on its inner surface resting on the convex ribs, and the nose approaching its flank. In a large mare this is a most serious complication, the length of the neck of the foal almost precludes the possibility of reaching the head, and even if this can be attained, attempts to straighten it often fail from rigidity of the neck. I have known instances in which the mare has been successfully delivered without re-adjusting the foal, and it is as well to employ discretionary traction prior to resorting to other means. The size of the calf's head prevents extraction by this method. Failing to adjust the head the other course to be adopted is embryotomy. Difference of opinion prevails as to which limb should be amputated. The one selected should be drawn out and skinned as far up as circumstances permit. Disjoint the leg at the pastern, leaving the foot attached to skin; this should be held tightly by an assistant. Introduce the left hand into the vagina (to prevent penetration of the skin) and with the right insert the instrument. This should be pushed in all directions till the skin is separated and the pectoral muscles divided. Adjust ropes to leg and employ traction with pulleys till complete evulsion of the limb occurs, leaving the skin intact. If the position of the head cannot now be rectified, the other limb must be removed. Material assistance may be rendered by casting the animal and altering her position by turning or placing on back. If hooks cannot be inserted in the orbits, a rope may be passed around neck and assistance afforded by gently pulling on the skin of the amputated limbs. I had to attend a cart-mare, seventeen hands high, some time since with this abnormality. The fore-legs were amputated in the manner described, but after four hours' fatiguing labour I had the sorry satisfaction of seeing the poor animal expire under my hands.

Transverse Presentation.—All four legs engaged in passage. This is a common form of dystokia in the mare, the head of the foal generally being deviated laterally and concavo-convex. The posterior limbs should be secured and the fore amputated. Pressure should be then directed on sternum and the foal delivered by the breech. As a rule, these cases are not difficult to manage.

Breech Presentation.—Hind limbs completely extended under body, tail and

buttock presented. Of all the forms of fœtal dystokia in the mare I consider this the most serious the veterinary obstetrist encounters. The length of the foal's limbs in animals of the larger type renders backward extension almost impossible, especially when nothing can be manipulated but the buttock and tail. An endeavour should be made to place the fœtus in a more favourable position by casting the mare and elevating her hind quarters. If the point of calcis can now be reached the double hook should be inserted in skin. Pull steadily so that cords may be adjusted around the limb, at the same time pressure should be directed on breech by crutch. Should these attempts to turn the limbs prove futile, delivery may be effected by division of the gastronemic tendons. If this, too, is unsuccessful, the only other procedure to adopt is embryotomy. The hind limbs should be disarticulated either at the hocks or hip-joints. I must confess I have never accomplished this task. If a suitable saw could be procured these mal-presentations would not, in my opinion, be such insurmountable barriers to the obstetrist. It is seldom one fails to manipulate the hocks, an instrument of this description could be then introduced around the anterior of leg, by this means it could be removed, and the foals extracted by hooks adjusted to stumps.

If no important advance can be recorded in that branch of veterinary obstetrics relating to the rectification of mal-presentations on account of imperfect instruments and other difficulties over which we have no control, the adoption of the general principles of anti-septicism has enabled us to prevent these serious complications which formerly proved so difficult to combat.

Although diseases consecutive to parturition do not come within the province of my paper, I shall briefly allude to retention of the fœtal membranes in the mare. In these animals the placenta is usually expelled within an hour from foaling. I am emphatically of opinion that, if not spontaneously discharged within twelve hours from the time of birth, the fœtal membranes should in all cases be artificially removed. Decomposition proceeds very rapidly in the mare's womb, and she is so susceptible to absorption of putrid material that the early removal of every particle of the placenta is imperative. This is not sufficient; the uterus should also be thoroughly irrigated with an antiseptic solution, and for this operation Reid's stomach pump answers admirably. In all cases where extraneous aid has been employed, even if the after-birth is expelled, I adopt this precaution, and I am so persuaded of its efficacy as a prophylactic measure that if I failed to carry it into execution and any untoward results supervened, I should consider myself guilty of gross and culpable negligence.

I fear I have trespassed too long on your patience, but I trust you will remember I do not pose before you as an instructor, but rather as one desirous of and anticipating information. Only general outlines have been recorded, technicalities and details I have avoided. The alleviation or mitigation of the pain and sufferings of the lower animals is a solemn responsibility, we are under obligations not only to patients and employes but also to Him who has placed man in the supremacy. It behoves us, therefore, to adopt every available means of obtaining knowledge, to disseminate what we already possess, and thus each individual do his share for the advancement and honour of the profession to which he belongs.

A very good discussion followed the reading of the paper in which the President, Messrs. Elder, Heath, Ascott, Oliver, Collings, Bloye, Harvey, and Bond took part.

Hearty votes of thanks were accorded the essayist, after which the members dined together.

W. B. NELDER, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE autumn quarterly meeting of the Association was held at the Queen's Hotel, Leeds, on Friday, the 25th of October. Mr. James Cooke, of Scarborough (president), was in the chair, and there was a large attendance, including: Messrs. J. M. Axe, Doncaster; M. Robinson, Barnsley; J. Clarkson, Garforth; J. S. Scriven, Tadcaster; P. Deighton, Selby; Frank Somers, G. Bowman, A. W. Mason, S. Wharam, H. G. Bowes, G. H. Simpson, W. F. Greenhalgh, and A. McCarmick, Leeds; G. Pickering, Scarboro'; S. Chambers, Kirkeaton; F. W. Thompson, Harrogate; G. Whitehead, Batley; J. C. Collings, Otley; F. W. Clough, Morley; J. Atcherley, Harrogate; H. Snarry, York; J. S. Carter, Bradford. The visitors present were: Messrs. Charles Steel, A.V.D., Dublin; A. J. Lane, Leeds; A. J. Moffett, Otley; D. Dudgeon, jnr., Sunderland.

The Compulsory Notification of Diseases.

A number of communications were brought under the notice of the meeting by the President and the Hon. Secretary (Mr. Frank Somers). One was a circular from the Council of the Royal College of Veterinary Surgeons in regard to the letter of the Board of Agriculture, asking whether there would be any objection to the veterinary profession being placed with regard to contagious diseases of animals in a similar position to that occupied by the medical profession under the Infectious Diseases (Notification) Act, 1889, it being understood, as in that case, that a small fee would be paid for the notification of the disease.

Mr. HERBERT POLLARD (Wakefield), who was unable to attend, wrote that he was distinctly opposed to any order like the one suggested. He says:—"In the first place, our clients employ us confidentially. If we can persuade them to report any disease, all right; but I think we have no right to abuse this confidence. My second objection is the 'small fee' that is suggested. We want no more small fees; we have already done so much, as a profession, that general practice is almost a thing of the past. Let us, at any rate, keep the fees up as long as we can. If the Association pass a resolution in favour of supporting a notification order, I shall, of course, have to support it."

The PRESIDENT said the subject required careful consideration and discussion. No doubt, on first reading the circular, many veterinary surgeons might think that it would be a benefit to their profession to have compulsory notification of the existence of any contagious diseases, but the question wanted to be thoroughly threshed out. He believed that the Infectious Diseases (Notification) Act had been the cause of much dissatisfaction and disagreement in the medical profession. It was a well known fact that infectious diseases, in their early stages, were frequently sources of infection, and it would be necessary to report those cases as soon as possible, if the proposed notification order were to be carried out satisfactorily. But many of these diseases, in their early stages, did not show symptoms sufficiently diagnostic to make them certain that they had a typical case to deal with. Under the proposed act they would run the risk of incurring a penalty if they did not report such cases. An inspector would be sent down, and if he were an unprincipled man, or a man who would like to score a point over a practitioner, he would have the opportunity of doing so. If the Board of Agriculture specially appointed veterinary inspectors who did not follow the duties of a practitioner, or if every practitioner was able to undertake the duties of an inspector and to attend to the notifying of diseases in connection with the stock of his own client, then the thing would be different, and the act would probably be a benefit both to the veterinary medical profession and the public. He thought that, in the first place, they should consider their own position as a professional body, and secondly, the public. Only fourteen days was

allowed for a reply to the circular of the council of the Royal College, and therefore there was little time for consideration of the matter outside. He asked for the opinion of the meeting which should be communicated to the Council. He thought they ought to try to bring some pressure to bear upon the Board of Agriculture with the view of obtaining a point or two in favour of the veterinary medical profession. There was, for example, the question of qualified registered practitioners holding positions as inspectors. In his opening address as president of the Yorkshire Association last January he gave expression to the idea that every man should be able to discharge the duties of inspector in his own cases, and brought forward what he considered justifiable reasons for advocating it. Subsequently, a writer in *The Veterinary Record* controverted the proposal, arguing that every veterinary surgeon was not competent to act as a veterinary inspector. Such an argument would equally apply to the inspectors; they had all sorts of men as inspectors.

Mr. A. W. MASON said the question had been rather sprung upon them, and only a short time was given them in which to reply. As to his own attitude about the present time, he need hardly tell them how he should reply to the circular from the Royal College—that he did not care for compulsory notification as suggested by the Board of Agriculture. At the same time he confessed to the belief that eventually the Government would compel them under a penalty or fine to notify the existence of any contagious disease of which they were cognisant, in the same way as laymen had to report cases of swine fever, pleuro-pneumonia, and glanders. He had wavered somewhat in his own mind as to how he should act, whether it would not perhaps be the best to agree with the Board of Agriculture and accept what would inevitably come, or, as the president suggested, whether the proposal did not afford a good opportunity for the veterinary profession to ask something of the Board of Agriculture for doing what was desired of them. They might perhaps say to the Government: "If we are willing to notify the existence of contagious diseases what compensation are you going to give to a body of professional men whom you recognise as likely to be of some use to the British public?"

Mr. J. CLARKSON remarked that when he read the circular he resolved in his own mind that his reply should be that he was against compulsory notification as suggested. He quite agreed with the President and Mr. Mason that it was a matter which should not be passed over lightly. In the event of the adoption of such an order they would be liable to a penalty or fine for not notifying a case which came under their notice. Another important consideration was whether the order was to be of a national character or only left to the local authority to carry out. If one district decided to put the order in operation, and another district decided not, he quite conceived that difficulties would arise. Hitherto the Government had almost ignored them as a profession, and had treated them very badly. In the first place, he thought they should look to the stockowner who called them in, and next consider themselves. In regard to the Infectious Diseases (Notification) Act, where that measure was in operation there was a recognised medical officer of health. But to whom would they notify under the Contagious Diseases (Animals) Act? Personally, he should object to the notifying to the local policeman, or any person of that class. Unless the present system of inspection was altered, the suggested order would not be of very much good. There was now too great a delay. The present was, as had already been pointed out, a good opportunity of trying to gain something for the profession. If the Board of Agriculture would recognise them as a profession, and ask the profession to assist them in the matter, he thought it would result in benefit to the country at large.

Mr. WHITEHEAD directed attention to an article by Professor Williams, who said the subject required considerable discussion. He (Mr. Whitehead) apprehended that the order, like the dog-muzzling regulation, would be left to the local authority.

Mr. G. PICKERING said if the Board of Agriculture would acknowledge them as a profession, and make the order general and independent of the local authorities, they might accept it; otherwise they could not.

The HON. SECRETARY intimated that he was not in favour of the order. The Board of Agriculture, he added, had not assisted them. During the last six months they had been at loggerheads with the authority on the question of appointments.

Mr. THOMPSON (Harrogate) thought they ought to look at the matter from the view that the good of the country was greater than the good of a closed profession theoretically. Under suitable conditions compulsory notification would be beneficial. One of those conditions was that they should not have to report to the local police-officer, and another was that the final decision as to whether their diagnosis was correct or not should not lay with a local practitioner, but with an officer from headquarters.

Mr. CLARKSON: And that the order or Act should be general?

Mr. THOMPSON: Certainly.

The HON. TREASURER (Mr. J. Scriven, of Tadcaster) said he should be in favour of compulsory notification if it were made general, but he could not sign the document which had been sent to him affirmatively, in the absence of full information. As a matter of inquiry, he should like to know whether, as in the case of an outbreak of swine fever, an inspector would be sent down from London and the matter taken out of their hands entirely.

Mr. G. E. BOWMAN would not agree to the proposal, so far as he understood it.

Mr. MASON repeated that he believed ultimately a compulsory notification order would come upon them, and said that what he objected to personally was the evasive character of the letter. It afforded them little or no information as to what the Board of Agriculture required of them, or what good was likely to accrue to them or to the British public by the adoption of a compulsory Act.

Mr. CLARKSON then proposed—"That the Yorkshire Veterinary Medical Association as a body object to a compulsory notification order, as suggested by the Board of Agriculture, without further data on which to form an opinion."

Mr. MASON seconded, and the resolution was carried with only two dissentients in a largely-attended meeting.

The Extirpation of Tuberculosis.

The Scottish Metropolitan Veterinary Medical Society invoked the co-operation and support of the Association as well as kindred societies, for the adoption of measures whereby bovine tuberculosis in this country might be checked and ultimately extirpated. A copy of the communication addressed to the Council of the Royal College on the subject was read.

The PRESIDENT reminded the meeting that the subject of tuberculosis, and the inspection of dairies, had been discussed at previous meetings of the Association.

Mr. MASON also recalled the fact that the Council of the Royal College had formed a special committee, of which he was a member, to consider the question, and said it would meet in London on the following day. He invited an expression of opinion on the subject which, he pointed out, needed careful consideration. He knew that for some years past it had been the feeling of the Yorkshire Association that tuberculosis should be scheduled

in the Contagious Diseases (Animals) Act, but the point was how far they should go. It was an important consideration how, after the disease had once been scheduled, the Government would deal with the cases. A few minutes ago the meeting would not join with the Government in reporting contagious diseases, and it was now proposed to schedule another disease.

Mr. CLARKSON: We object to the method.

Mr. MASON: Yes, nevertheless it is the thin edge of the wedge. Here, perhaps, we can point out the method in which we should like it done.

Mr. S. CHAMBERS (Kirkheaton) moved that they should give their support to the Scottish Metropolitan Veterinary Society.

Mr. CLOUGH (Morley) seconded, remarking that it was high time tuberculosis was scheduled in the Contagious Diseases (Animals) Act. There were numerous cattle in the neighbourhood of large towns whose milk was not fit to be drunk. It was something shameful.

The HON. SECRETARY also supported, suggesting that the owners of slaughtered stock should be compensated out of Imperial funds. He, too, thought that tuberculosis ought to have been scheduled years ago. He strongly deprecated the sale of tubercular milk which now took place in large towns. Quite recently he saw a cow in which tuberculosis was far advanced, and the animal's milk was afterwards mixed with the yield of healthy cows for sale in the lower parts of Leeds. Tubercular milk was, to his knowledge, sold in Leeds, and if such milk was not thoroughly boiled it would be liable to communicate consumption.

Mr. J. M. AXE said that in his neighbourhood of Doncaster there were several animals suffering from tuberculosis, and the milk from those animals was, he knew, very dangerous. He thought that all dairies should be under the supervision of veterinary surgeons, and that in cases of suspicion a proper test should be made.

The resolution was carried unanimously.

New Member.

On the motion of Mr. BOWMAN, and seconded by the TREASURER, Mr. James Brand, Leeds, was elected a member of the Association.

Appointment of Officers.

The PRESIDENT proposed Mr. Clarkson as his successor, and this was seconded by Mr. PICKERING, and supported by Mr. Bowman and Mr. J. M. Axe. Mr. Bowman observed that Mr. Clarkson would make an excellent President, and would do honour to the position.

The resolution was adopted unanimously, and Mr. Clarkson, in acknowledging his election, said he would try and do his best in the honourable position to which he had been unexpectedly called.

The following gentlemen were elected vice-presidents: Mr. Cooke (the retiring president), Mr. Whitehead, and Mr. Greenhalgh.

Mr. BOWMAN proposed a hearty vote of thanks to the hon, secretary (Mr. Frank Somers) and proposed his re-election, believing they could not have a better gentleman for the position than Mr. Somers.

The resolution was cordially seconded by Mr. Axe, and supported by Mr. Mason, Mr. Scriven, and Mr. Thompson, and unanimously agreed to.

On the motion of Mr. MASON, and supported by several members, Mr. Scriven was unanimously again appointed as hon. treasurer, and heartily thanked for his past efficient services.

Mr. SOMERS and Mr. SCRIVEN replied, and thanked the members for re-electing them.

The two auditors, Mr. Mason and Mr. Pollard, were re-appointed.

Mr. MASON next proposed a hearty vote of thanks to the retiring president, to whom, he said, they were greatly indebted. He had filled the office with grace and dignity, and the association had benefited from his presidency. They also wished again to thank him for the hospitality he showed to the members on the occasion of the meeting of the association at Scarborough.

Mr. GREENHALGH, in seconding, said that Mr. Cooke had shown great ability in the year of his presidency.

The PRESIDENT replied, expressing his sense of the kind assistance of Mr. Mason, the hon. secretary, and the hon. treasurer during the year, and for the way in which he had been supported by the members at the periodical meetings of the association.

Interesting Exhibits.

Some time was afterwards spent in examining specimens brought by members. Mr. Axe showed an excellent dissection of the nerves and blood-vessels of the neck and head of a horse, which was taken to the College when he was a pupil, many years ago. The animal, which belonged to a London brewery company, suffered from rupture, and it died. He had been offered by Professor Axe £25 for the specimen for the museum, but declined to part with it. Perhaps when he died he might leave it to the museum.

Mr. COLLINGS (Otley) showed a somewhat interesting brain tumour. He explained that about eighteen months ago he was called to the West Riding Asylum at Menstone to examine a bull, about nine months old. There were no unusual symptoms, except that the animal frequently raised its head. His diagnosis showed that the brain was being invaded on the left cerebral hemisphere. So remarkable was the tumour that the brain was kept by the asylum authorities, by whose permission he now exhibited it. The sire of the bull was a very excitable animal, and another of his progeny, a bull, when a year old, died suddenly—that was to say, in about five minutes.

Mr. WHITEHEAD took the members to an adjoining stable to examine a yearling filly by a celebrated hackney sire which was suffering from a singular disease on the face.

A short case was reported by Mr. Wharam, Leeds, relating to a puncture in the bowels in flatulent colic, and Mr. Deighton also exhibited a specimen that excited more or less curiosity.

The different exhibitors were warmly thanked, on the proposition of the President.

A Review of Veterinary Science.

Mr. G. PICKERING (Scarboro') read a paper on "Some Subjects of Interest to the Veterinary Profession." As to education he said he thought a member of their profession ought to be as well educated as members of the medical and legal professions. A man might make a good doctor or lawyer but not be at all suitable for a veterinary surgeon. More than gentlemanly manners and education were needed. A man must be naturally adapted for veterinary work and have a liking for it; otherwise he would never do any good. As the restrictions were now greater for the admission of students into the colleges, they should certainly have fewer men entering their ranks. A healthy competition did no harm, but they were already beginning to feel the effects of overcrowding. And nothing was more injurious to a profession, as the medical and other professions were finding out to their cost. With regard to pupils he thought that every young man who intended to enter the profession, and it was no good unless he could pass the matriculation, ought to go for a certain time to a good veterinary practitioner who had a mixed practice. That practitioner would be able to tell whether he was a suitable man or not for the profession he had chosen. When a young man had got his

diploma he began to think about the best way to make his living. Some became improvers, some assistants, and others who had had some practical experience would commence practice on their own account. This they would find very difficult work, and unless they had private means to keep going until they got known and established, they would find it cheaper and better to go into a practice where the veterinary surgeon is thinking of retiring or wished to take a partner. Having indicated the varied and more important work of a veterinary surgeon, Mr. Pickering expressed the opinion that the best appointment a man could get, if he were suitable, was in the service. But they must not run away with the idea that anyone who had got his diploma could get into the Army. In the Army it was all the better if a man had a little private income, although there were many who lived on their pay. They were glad that great improvements had been made in the Army Veterinary Department during the last few years. Proceeding, he said they ought to have properly qualified veterinary surgeons as district inspectors. It was a slight on their profession when unqualified men were appointed to these positions, but he had no doubt that in time the public would appreciate more fully the valuable services of the profession, and realise that veterinary surgeons would make better inspectors than unqualified men. The sooner they had public slaughterhouses the better, and all meat and animals should be inspected by qualified veterinary surgeons. He believed the country practitioner had suffered more from the so-called veterinary chemist than from all the empirics. Why these people were allowed to use the term "veterinary," he did not know. Could they use the word "chemist" if they opened a shop for the sale of veterinary medicines? Speaking of the evidence of veterinary surgeons in courts of law, he said he did not think that anything more than this had brought the name of the veterinary surgeon into bad repute, and often made it the laughing stock of the public. As to a remedy, would it not be much better, he asked, to settle these cases by arbitration, instead of going into court, and call in a well-known practical and experienced man, who could be relied on? As members of a noble profession, they ought to uphold the R.S.P.C.A. as a prevention of cruelty society, but not as a prosecuting society. They should never perform unnecessary operations or operate for the sake of experiment. And all operations should be performed so as to cause their "patients" as little pain as possible. He concluded by giving a number of practical hints with regard to the treatment and examination of horses, and was thanked for his paper, which, it was understood, would be discussed at a future meeting.

At the conclusion of the proceedings, those who had attended the gathering were entertained to tea by the Leeds members of the association. The hospitality thus shown was recognised in a vote of thanks moved by Mr. Cooke, and heartily adopted.

Mr. MASON, on behalf of the Leeds members, suitably acknowledged the compliment.

FRANK SOMERS, *Hon. Sec.*

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

A MEETING was held at the Albion Hotel, Lincoln, on Thursday, November 7th. Present: Mr. T. A. Rudkin (Grantham), president, in the chair; Messrs. W. H. Brooks, Leadenham; W. G. B. Dickinson, Boston; R. T. Hardy, Sleaford; C. Hartley, H. Howse, C. Seely, Lincoln; J. Mackinder, Peterboro'; J. A. Robinson, (Hon. Sec.), Market Deeping; Jas. Smith, Huntingdon; and Captain Russell (Hon. Treas.), Grantham.

The minutes as published in the veterinary journals having been taken as read, letters of apology for non-attendance were read from Professors

Penberthy, Pritchard, Williams, W. O. Williams, and Messrs. Clarke, Freer, Gooch, Kidd, Reeks, and T. E. Smith.

The SECRETARY read the following letter from Mrs. Goodall in reply to the vote of condolence sent from the last meeting of the Association.

Melton Mowbray, *July 10th*, 1895.

Dear Sir,—Will you kindly convey my grateful thanks to the members of the Lincolnshire Veterinary Medical Association for their kind expression of sympathy with me in my great sorrow. My dear husband was always anxious to do his best for the profession he loved so much, and he often spoke of the medical meetings as most enjoyable and happy times.—I remain, yours very sincerely,

MARY GOODALL.

To J. A. Robinson, Esq.

Bovine Tuberculosis.

The circular letter from the Scottish Metropolitan Veterinary Medical Society was read.

Captain RUSSELL said that he thought the Scottish Association had been a little hasty in their proceedings in forwarding this petition to the Royal College of Veterinary Surgeons before consulting the other veterinary associations in the country. He thought they would make a mistake to include tuberculosis in the list under the Contagious Diseases (Animals) Act. If they went on, as they had been going on for the last 20 years, veterinary surgeons would not be required at all except as advisers, for they were handing all these cases over to the butcher, and the arrangements now in practice for putting down swine fever would probably be used in tuberculosis. Those who travelled about the country would use tuberculin which the veterinary surgeons should use, and the butcher would use the pole-axe. He felt if it were not for the ailments of horses which were of considerable value, that they would have difficulty in living at all. He moved that the Board of Agriculture be not solicited to take this question under consideration at present.

Mr. HARTLEY said he would perhaps not go quite so far as that. He did not think the Government would take it up, nor did he think that agriculture could stand it. The profession was not strong enough to deal with it. He thought the Scottish Association should have taken the feelings of the veterinary societies throughout the kingdom before taking the course they had. The agricultural community would bring as much pressure to bear as possible upon their representatives to make a common stand against it.

Mr. HOWSE did not see where the money was to come from to recompense them.

Mr. DICKINSON thated that it was not thoroughly proved that tuberculosis was transmissible from the food or milk.

Mr. HARTLEY said he did not think it was hereditary but it was contagious, and it would require a great amount of courage for the veterinary surgeon to go among his clients with tuberculin. He thought it was a Quixotic idea at present.

Mr. ROBINSON said they had very little of tuberculosis in the district in which he lived, and he did not think that in Lincolnshire, at any rate, it was a question of great urgency; he thought there could be no doubt that it was a very contagious disease, especially where kept thickly together in ill-ventilated places. Perhaps the best thing he could do would be to write to the Scottish Metropolitan Society stating that this Association did not consider the time ripe for action in the matter.

Mr. MACKINDER said the general opinion of the British Medical Association when they met at Cambridge was that tuberculosis in the human subject was a contagious disease and was communicable by milk.

Captain RUSSELL said he thought it would not be sufficient to send a letter to the Scottish Society alone. After the attacks that had been made on a professor, the least they could do was to send a letter to the R.C.V.S. expressing their views on the matter. He therefore suggested that they send a letter to the Secretary of the Scottish Veterinary Medical Association, and also to the Council, recommending that no action be taken in the matter at present. He also thought the other veterinary medical associations should give expressions to their views on the subject.

Mr. HARDY seconded the resolution, and it was adopted.

Compulsory Notification.

The question of compulsory notification was then mentioned, but it was decided to adjourn the consideration of it to a future meeting.

Presidential Address.

BY T. A. RUDKIN, M.R.C.V.S., GRANTHAM.

Gentlemen.—My first duty is to thank you very much for the honour you have conferred upon me by making me your president. It is an honour which I hardly thought of aspiring to when I first joined the Lincolnshire Veterinary Medical Association, knowing how many more capable members there were better able to fill the presidential chair, but believe me I have always the best interests of our Association and profession at heart, and if I can do anything in my small way to further the interests of either I shall feel only too delighted at the expiration of my term of office. I do not intend to try your patience by a lengthy address. I know it is usual on an occasion like this to take a cursory glance at all that is going on at the present time in our profession. To do that I need only refer you to the various veterinary periodicals.

I know you are all heartily sick of the question of the Board of Agriculture, and I think I might quote the words of the Irishman when he clipped the pig, and say there has been a tremendous lot of noise and precious little work up to now. I think we as a profession should put our foot down and refuse to work under a lot of aristocratic pensioners and policemen. I have no doubt you have all received a circular from the Royal College of Veterinary Surgeons, *re* the Notification (Animals) Act. For my own part I think the Act is unnecessary, and not likely to benefit the veterinary profession. Under existing circumstances there is so much red tape in the working of the Board of Agriculture that it is a perfect nuisance for veterinary surgeons to be in any way connected with them, and I think this Act if passed will only tend to confuse matters.

Since our last meeting one of the greatest scientists of the day, and I think I might say the greatest, has passed over to the great majority; I refer to Mons. Pasteur. He has by his diligent study and research done more for the study of bacteriology and for the benefit of suffering humanity than any man up to the present day, and I have no doubt his name will be looked up to and honoured for generations to come.

I think we can congratulate ourselves as an association, and I hope in a large county like this we shall keep steadily increasing in numbers. I am sure every veterinary surgeon can learn something at the meetings of our various societies, and some by their kindly help and advice may often push on a young and struggling practitioner. I wish we as individuals could say we were all flourishing. Undoubtedly times are very serious for agricultural practitioners. No class of men in their prosperity stuck better to the veterinary surgeon than the farmers. I am sure we as a profession have done all in our power to value the confidence they have placed in us by persuading

them as far as possible to breed from sound stock, and helping them to, as far as possible, avoid the infectious and contagious diseases. I could not help smiling a few weeks ago when I read the remarks of one of the members of our profession. I think he said that no veterinary surgeons ought to keep a forge, nor go in for horse dealing, livery stable keeping, &c., but he might with impunity farm and act as a veterinary surgeon. Poor veterinary surgeon! You can, as recommended, first go as a pupil for two years, then go to College for four years, and then if you are a smart young fellow and have a certain amount of luck, perhaps you may get a berth as assistant at £50 per year and find yourself. Under our existing rules and regulations I must say that I think our lot is not a happy one. I trust that there may be a good time coming for us all.

Grunting and Unsoundness.

Mr. H. Howse, according to notice, opened a discussion on "Grunting and its bearing upon Unsoundness." He said:—Gentlemen,—I am requested to again bring before your notice the subject of "Grunting in Horses." You will remember that at the last meeting held at Peterborough the subject was submitted for your opinion and discussion, owing to the sale of a highish priced hunter at Messrs. Tattersall's last June. The horse was a "pronounced grunter" both when galloped and when threatened against the wall, was rejected by me as a "grunter" and unsound, and was returned to Messrs. Tattersall. These gentlemen took the opinion of two eminent practitioners in London who gave certificates of soundness. The buyer retained the horse rather than incur the expense of a lawsuit. Messrs. Tattersall, in a letter to the purchaser, said "that the question of soundness, or unsoundness, of a grunter ought to be definitely settled by the veterinary profession." Until then, I thought there could not be two opinions on the subject, but it seems there are. One of the examining gentlemen wrote to this effect "That it was of little importance that a horse should grunt so long as there was an absence of roaring or whistling." By the same kind of argument "cribbing" or being affected with "stringhalt" might also be considered "of little importance," so long as the horse was capable of doing his work and, continuing that line of argument, horses having spavins, curbs, or any other defects ought also to be regarded as sound so long as the defect—acknowledged to exist—did not interfere with the animal's usefulness.

But this argument is sophistical, fallacious, misleading and disappointing—such animals are termed "sound for practical purposes," but are technically "unsound"—unsound from a professional point of view. The two conditions essentially differ. An animal, after successfully passing the ordeal of examination for soundness possesses a standard degree of excellence, that not only enables him to perform the work his build and conformation fit him for, but has also an enhanced value in consequence of his degree of perfection; whilst another animal, being the subject of some defect, such as grunting, is by that defect removed from the degree of excellence required, and, commercially, does not command the same value in exchange for money. The point, therefore, is important, instead of being unimportant; and, so far as I can see, does not admit of two opinions. Sometimes too correct conclusions can unmistakably be arrived at, arguing from a negative point. It is related that a finicking fop in an hotel coffee-room was one day putting on so much unnecessary side, that his antics attracted the attention of the other occupants of the room. One, thinking audibly, muttered "puppy." The exquisite, on hearing the remark, immediately "reared up" and desired to know if the epithet "puppy," was meant to apply to him. The other man replied, "Yes, you are a puppy, and I'll prove it if you will answer me this question. When you micturate, do you elevate and abduct a hind leg?" "No," thundered the fop; "then," said

the questioner quietly, "all old dogs do." So with regard to the point in question, all sound horses perform every reasonable exertion without involuntarily "grunting." The question is now before you, and I trust unanimous conclusion will result from its debate.

Mr. C. HARTLEY said he was very pleased to hear Mr. Howse's remarks, in which he had brought the facts before them to try and get the opinion of the Association on this wearying and harassing topic. He did not think they would find many men who would not say that "grunting" was not a sign of legal unsoundness. He should like it to go forward in the strongest terms that grunting was unsoundness. He was certain in his own mind that he had always regarded an animal that grunted or groaned, he had always regarded that grunting was a form of unsoundness. There were lots of animals that grunted that were perfectly clear in their breathing, but that had nothing to do with it. It should be known that veterinary surgeons of Lincolnshire held that grunting was an unqualified unsoundness. He did not think that a horse should grunt unless there was some malformation of the air passages in the neighbourhood of the epiglottis, and he maintained that any man who gave a horse that grunted a certificate of soundness ran as great a risk as from spavin, &c.

Mr. MACKINDER agreed with the remarks made. He rejected a mare which grunted as unsound at an agricultural show, but a professor said there was nothing unsound about her, but he had never done a bit of work for the man to whom the mare belonged since. He had always rejected them as unsound if they grunted, and he always should.

Captain RUSSELL begged to endorse the remarks as regarded grunting. He would like to ask them one question. What was the definition of soundness? Sound meant perfect. Could a horse that grunted, that made a noise, be said to be perfect? That in itself was a sufficient answer to the question whether grunting was unsoundness or not. He had taken the trouble to make *post-mortem* examination of grunters, and he had found chronic disease of the lungs. He should never think of passing a horse as sound that grunted. He did not mean to say that a horse might not be practically sound which grunted, but he hoped that other associations would take the matter up, and that it might be definitely settled that a horse that grunted was not sound.

Mr. DICKINSON thought they should consider a differentiation in the grunt, though he agreed that a horse that grunted should not be passed as sound, and the man who passed a horse like that should render himself liable, because the man who bought him was not getting value for his money. As to what Captain Russell said about consolidation of the lungs or fluid on the chest, he took Captain Russell's word, but he had not seen it. He had seen in *post-mortem* examinations that animals suffered from intercostal rheumatism, and he had seen the same thing in horses that had suffered from pleurisy. A grunt was not a short sound, it was prolonged, and he should differentiate between these conditions and respiratory affections. It had been stated by Mr. Hartley that a horse did not grunt without obstruction of the air passages. A horse grunting from a laryngeal affection had a great chance of becoming a roarer or a whistler, and that from adhesion of the pleura. If they could decide as to which of these conditions existed, either the laryngeal or the pleuretic affection, they would be better able to decide as to the course to take. He remembered a horse grunting from fistulous withers; then there was the grunt of fear, and they should be able to differentiate between a grunt of fear and a grunt from an organic defect. He should never pass a horse sound that grunted, and never intended to do so.

Mr. HARDY differed from Mr. Hartley as to the increased respiration. He had heard two or three horses grunt with a stick, that when galloped, would

not make the slightest noise. A horse that grunted must be unsound, and he should never think of passing him.

Mr. DICKINSON cited a case of a horse that had been passed, and was afterwards rejected because he had had tracheotomy performed on him. There would be an excrescence on the trachea which would impede his respiration. The horse was not a whistler or a roarer, but the impediment caused an obstruction.

Mr. HARTLEY cited a case of a horse breathing better after its larynx had been rested by tracheotomy. The term grunting was unsatisfactory, and they ought to find a better word. As to the grunt of fear, if they rejected every horse that gave vent to a little expression of alarm, they would have to reject a good many.

The PRESIDENT said they were all agreed as one man that grunting was distinctly unsoundness, and he proposed that they, as a society, write to the other societies and say they had this discussion on at their meeting, and that it was the opinion of the Lincolnshire veterinary surgeons that a horse that grunted was unsound. They all knew there were nervous grunters, but there was a difference between that and a prolonged groan. He was surprised to hear that any member of the profession passed a horse absolutely sound that grunted. He found many young cart horses that grunted distinctly, and they were unsound. He moved that their Secretary be instructed to write accordingly.

Mr. HOWSE said it had been intimated by Messrs. Tattersall that the profession should come to some decision.

The PRESIDENT finally proposed, and Mr. HARTLEY seconded, that it is the unanimous opinion of the members of the Lincolnshire Veterinary Medical Association, assembled at Lincoln on November 7th, that the sound recognised as grunting in all horses, when subjected to veterinary examination, is distinct unsoundness, and that the Secretary be requested to convey this opinion to all the veterinary societies in the kingdom, with a view of eliciting their opinion thereon. Adopted unanimously.

The SECRETARY said he thought it was only their due to carry a hearty vote of thanks to Mr. Howse for the way in which he had dealt with the subject, which was of great interest to all of them, and he had very much pleasure in proposing a vote of thanks to Mr. Howse.

Mr. HARDY seconded, and the proposal having been adopted by acclamation, Mr. Howse said he was very much obliged to them, and he held that it was very important that a definite decision should be come to, so that there should be no doubt about passing a horse which was unsound. He hoped that something clear would be arrived at from communication with the other veterinary associations. He should like it adopted all over the country.

The Council of the Royal College of Veterinary Surgeons and Advertising.

In accordance with the notice on the agenda, Mr. Robinson then moved "That the proposed action of the Council in reference to advertising is in advance of the requirements of the profession."

A discussion ensued, in which most of the members present took part, and it was generally felt that as we were advancing so rapidly to the social position held by the medical, legal, dental, and other learned professions, it would be beneath the dignity of the Lincolnshire Veterinary Medical Association to take any steps to retard the progress of the veterinary profession in the direction of equality with the other professions.

Captain RUSSELL then proposed a vote of thanks to the President for his address and his conduct in the chair. This was seconded by Mr. Jas. Smith, and carried unanimously.

The members of the Association afterwards dined together, the usual loyal, patriotic, and professional toasts being duly honoured, and concluding a very successful meeting.

J. A. ROBINSON, *Hon. Sec.*

CONTAGIOUS DISEASES ANIMALS ACT, 1895.

SUMMARY OF RETURNS, for the four weeks ending 14th December, 1895.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders and Farcy.	Rabies.	Foot-and-Mouth Disease.
None	*Slaughtered.* Diseased, 7,456 Died... 1,071 Suspected 170 Total 8,697	Fresh Outbreaks 19 Animals Attacked 194	Fresh Outbreaks 60 Animals Attacked 118	Dogs killed 35 Dogs died 6 Total 41	None

SCOTLAND.

None	*Slaughtered.* Diseased 532 Died ... 78 Suspected 4 Total 614	Fresh Outbreaks 13 Animals Attacked 24	Fresh Outbreaks 2 Animals Attacked 7	None.	None

IRELAND.

None	*Slaughtered.* Diseased 65 Died ... 39 Suspected 353 Total 457	None.	None	Dogs killed 31 Ass ,, 1 Cattle died 7 Ass died 1	None.

MICRO-ORGANIC LIFE AND PLANT GROWTH.

AMONG the many important results which have followed from the brilliant researches of Pasteur, none possesses greater interest for the agriculturist than the discovery of the important and beneficent *rôle* performed by micro-organic life in promoting plant growth. The functions which they perform in the soil of every farm are, as is being recognised more and more every day, of the very highest significance. Indeed, in all departments of farm work they are active ; and without their aid the farmer could make no progress in his arduous and difficult occupation. Their presence on the farm is as neces-

sary as the presence of larger live stock—cattle, sheep, pigs—for without their assistance the farmer could not only not grow his crops, but he could neither make butter nor cheese.

Recent bacteriological work has demonstrated that every ounce of soil is teeming with myriads of bacteria, whose work it is to conduce to the successful growth of the crops of the field by elaborating, in a variety of ways, the necessary food constituents which the soil supplies to the plant; for the plant requires its food materials in a more or less simple form ere it is able to assimilate them. It is, then, by converting these more or less complex forms of food material in the soil into simpler ones that these minute workers in nature's economy are actively engaged. The soil, indeed, may be likened to a gigantic laboratory, in which the most varied operations are going on—those great chemical changes on which depend the continuity and welfare not only of vegetable but of animal life.

With regard to the number and nature of these very minute plants—as they may be called—since they approximate more to the plant kingdom than they do to the animal kingdom—we have as yet scant knowledge; but with regard to their number some conception may be afforded by the statement that of one class alone a gram of soil—an amount little more than the one twenty-eighth part of an ounce—may contain over half a million. Although science has, up to the present, discovered more than 1,000 different species, it cannot be doubted that this is but the merest fraction of the total number of different micro-organisms which exist. We do not know how many of these 1,000 may inhabit the soil. It is highly probable, however, that the majority, if, indeed, not the entire number, may be soil-dwellers. We have as yet, however, only succeeded in identifying a few species of bacteria in the soil. We know something, however, of the products that they elaborate. A large section of the community of these soil-workers are concerned in dealing with the organic matter—of vegetable or animal origin—which is to be found in varying proportions in all fertile soils, by splitting it up into such simple compounds as water and carbonic acid gas. These organisms have been in the past popularly known as putrefactive organisms. They infest in huge numbers every heap of rotting organic matter, which they sooner or later cause to be gasified. Their function, we need scarcely point out, is a very important one; as, were it not for their agency, the earth's surface would soon become so encumbered with the remains of dead vegetable and animal matter that life of all kinds would be rendered impossible by the interference with the great process of the circulation of matter. The carbonic acid, which is so important a source of plant-food in the air, and which is also the most valuable solvent of the mineral plant-food of the soil, is a product of the action of this large group of bacteria.

Other kinds of bacteria act upon the mineral matter of the soil. Some, for example, feed on iron compounds. But of all these bacteria, the most interesting yet discovered are those which deal with the elaboration of the nitrogenous matter. For a variety of reasons nitrogen is one of the most interesting of the elementary constituents of plant tissue, which contains it to the extent of one or two per cent. The amount does not seem to be great, yet so important a food is it, that no plants will grow where all sources of it are cut off. In most cases it may be said to be the determining factor in plant growth, which arises from the fact that it is apt to be less abundant than almost any other necessary plant food; and it may be said that one of the important problems of modern farming is to see that every field, destined for use in arable culture, is properly supplied with this highly important soil ingredient. That it is essential for plant growth has long been recognised; but no question in the whole range of plant physiology or agricultural chemistry has excited a wider amount of discussion, or has had devoted to it more

investigation than the question of whence and how do plants derive their nitrogen? As we have already indicated, the result of recent years' researches on the action of minute life in the soil, has thrown a good deal of light on this interesting problem.

Of possible sources of nitrogen to the plant, we have the air and the soil. The former, we know, contains nitrogen in very large quantities in the elemental form; indeed, some four-fifths or its entire bulk is made up of this gas. In the soil, on the other hand, it is present in what at first sight seems but trifling proportion, and not, as in the air, in an elemental form, but in a variety of combinations. It is in helping the plant to utilise both sources of nitrogen that the bacteria of the soil are effective.

It has been long known that the plant absorbed most of its nitrogen in the form of nitric acid. A strange fact about nitric acid is that if we search any soil with a view to detect its presence, we shall find that the amount it contains is very slight. Now, this is due to two causes. In the first place, on soils covered with vegetation, it is absorbed by the plants' roots almost as fast as it is formed. In the second place, where the amount is in excess of that required by the plant, or where the soil is bare of vegetation, the rain speedily washes this body out of the pores of the soil. Indeed, it is rather a striking fact that the latter should not have the power of retaining such an important and valuable plant food. Our wonder is increased when we remember that in respect of other plant foods, notably potash, a substance which is quite as soluble as nitric acid, the soil does possess a retentive power. At first sight, therefore, we are somewhat struck with the waste which nature seems to be guilty of in regard to this valuable substance. But a more careful investigation into the facts of the case will tend to correct this impression. No doubt, under certain conditions, a very considerable loss of nitrogen may take place in the soil. On the other hand, we must admire the admirable provision made for minimising this loss. This is to be found in the fact, as we have already indicated, that the soil never contains at any time more than very minute quantities of nitric acid, and that most of the nitrogen is present in it in a form which is not liable to be lost by drainage, and which is only slowly converted into nitric acid as the plant requires it.

It is well then for vegetation that nearly all the nitrogen in a soil is in certain organic forms, which are for the most part of an insoluble nature. A very minute amount is as ammonia, a form which, although equally soluble as nitric acid, is yet retained in the soil, and not liable to be washed away by the rain. Now, it has been long known that nitrogen in the form of organic compounds, and as ammonia, was liable, under suitable conditions, to be converted into nitric acid, and this knowledge was taken advantage of for manufacturing saltpetre, or potassic nitrate, which, as all are aware, is an important ingredient of gunpowder. The conditions necessary for this process were, in addition to abundance of nitrogenous matter, a certain degree of warmth and moisture, free access of air, and the presence of lime salts. Large heaps of mould, rich in nitrogen, mixed with decomposing animal matter and ashes, were erected in many parts of the world for the purpose of obtaining saltpetre, and were known under the name of "nitre beds," "nitraries," and "saltpetre plantations." So scarce was saltpetre for many years, and so important consequently was its manufacture, that special laws, known as "saltpetre laws," were enacted by the French Government for its regulation, and which remained in force till the time of the French Revolution.

But although the general conditions under which the process of *nitrification*, as it was known, took place, it was not till the year 1877 that it was discovered to be caused by the action of micro-organic life. It was only then that two French chemists, Schlœsing and Muntz, made this interest-

ing discovery in the course of some experiments on the purifying effect which the soil exerted on sewage matter. These investigators discovered that a soil after being treated with such an antiseptic as chloroform no longer possessed the power of causing the nitrification of the nitrogenous matter of the sewage. They inferred from this fact that the process was connected with micro-organic life. It may be here pointed out that nearly fifteen years before this the great Pasteur had predicted that the process of nitrification would be found to be probably connected with ferments.

At first it was only supposed that only one kind of micro-organism was implicated in the change, but subsequent research on the question has shown that several distinct kinds of bacteria are active. Two of these have already been isolated, and there is strong evidence to infer that a third species of bacteria is implicated in the process.

As we have seen, the organic nitrogen is by far the most abundant form of nitrogen in the soil. The first step which is effected, therefore, seems to be the conversion of nitrogen from this form into ammonia. What the exact nature of the bacteria which effect this change is we do not know, but those carrying on the process in its two subsequent stages have been isolated and studied. These subsequent stages are the conversion of ammonia into nitrous acid, and the conversion of nitrous acid into nitric acid. The former organism was the first to be discovered, has been named *nitrosomonas*, and has been described as consisting of "nearly spherical corpuscles, varying extremely in size. The largest of these corpuscles barely reaches a diameter of a thousandth of a millimetre; and some are so minute as to be hardly discernible in photographs, although shown there with a surface one million times greater than their own. The larger ones are frequently not strictly circular." The micro-organisms effecting the final stage of the process, viz., the conversion of nitrous into nitric acid, although isolated, are not so well known as the others. They have been called *nitro bacter*. A very striking fact with regard to both these kinds of bacteria is that they differ from all other hitherto discovered bacteria in refusing to develop in the ordinary cultivating media; indeed, in order to isolate them they have had to be cultivated on a special medium, composed entirely of mineral ingredients, viz., silica jelly mixed with certain other mineral substances. This fact is one of very great interest and importance for vegetable physiology, since it is subversive of what has hitherto been regarded as one of its fundamental laws, viz., that the power of deriving carbon from a mineral source is alone possessed by green-leaved plants.

With regard to the conditions most favourable for the development of this interesting process much has been discovered. In soils containing in abundance the elements of fertility, and the physical texture of which is such as to permit of a proper circulation of air, and possessed of a proper amount of moisture, this process will take place rapidly in summer weather. We say "in summer weather," because when the temperature approaches the freezing point the process entirely ceases; indeed some eight or ten degrees above freezing point the process develops most feebly. In this country we rarely have sufficient heat to produce its maximum development, which goes on about 100 degs. Fahr. These micro-organisms, it may be added, do not develop in a water-logged soil, or where any poisonous substance is present.

But not merely do bacteria help the plant to utilise the nitrogen present in the soil, they also help certain plants to utilise the nitrogen of the air. This discovery has solved a mystery which for many years has puzzled plant physiologists and agricultural chemists. If the roots of such plants as the pea, lupine, or clover be examined, certain wart-like excrescences will be found. It has been recently discovered that these excrescences are the homes

of vast numbers of bacteria which possess the power of fixing the free nitrogen of the air, and rendering it available for the plant's uses. The exact method in which this is done has not yet been clearly demonstrated, but there can be no doubt about the truth of the discovery, which serves to throw considerable light on the scientific principles underlying the rotation of crops, and to open up the prospect of new and improved methods of culture to the farmer.

CATTLE DISHORNING.

Making "Polled" Cattle.

BEFORE Sheriff Campbell Smith at Dundee recently, Harry Swan, farmer, Balhungie, parish of Monikie, was charged with three offences under the Prevention of Cruelty to Animals Act. The complaint set forth that (1) on 21st September at the farmsteading of Balhungie, he cruelly ill-treated, abused, or tortured 12 cattle belonging to him by sawing off not only the whole of their horns, but a considerable portion of their frontal bones or skulls, whereby they were subjected to great and unnecessary pain; (2) on 5th October, at Balhungie, he cruelly ill-treated 10 cattle belonging to him by sawing off not only the whole of their horns, but also a considerable portion of their frontal bones or skulls, whereby they were subjected to great and unnecessary suffering; and (3) on 30th September sent from Balhungie to the home farm of Tealing 12 of the cattle without having dressed or made provision for the protection of the animals' heads operated upon from the inclemency of the weather; in consequence of which suppuration took place in the wounds, and maggots were allowed to be formed therein, causing the animals intense and unnecessary suffering, resulting in the death of two of the cattle on 5th October, the enforced slaughter next day of two others, and serious injury to the health of the remaining eight. As an evidence of the interest which the case has evoked, there was a large attendance of the public in the Court, the majority of the spectators being agriculturists from the surrounding district, who followed the proceedings throughout with marked attention. Several prominent officials of the Society for the Prevention of Cruelty to Animals were also present. Accused tendered a plea of not guilty. The prosecution was conducted by Mr. Alexander Agnew, the Procurator-Fiscal, while Mr. W. B. Dickie, solicitor appeared for the defence.

Many witnesses for the prosecution and defence were examined, and after hearing the Fiscal and the Advocate for the defence, the Sheriff said the High Court of Justiciary, in interpreting the statute for the prevention of cruelty to animals, had decided that the operation of dishorning cattle, which consists in cutting off the horns as close to the skull as possible, and which causes considerable pain at the time, does not infer a contravention of the statute, the operation being performed skilfully and with as little pain as possible to the animals for the purpose of making the cattle more manageable in the feeding courts. That was the interpretation of the Act given for Scotland. There had been a different interpretation on the point given in England, but his Lordship was bound by the Scottish decision, even although in his opinion it was wrong, which he was not able to say it was. The question raised by the prosecution was whether the evidence in the case had established that there was a material difference between it and that case which had been disposed of by the High Court. The Fiscal had argued that there were differences in respect that part of the frontal bone was cut off, and that he had proved that the operation was not performed skilfully and

that it was not performed with as little pain as possible. As far as his Lordship could gather, the Haddington case was a case of close dishorning—as close to the skull as possible—just as much as the present case was close dishorning. The question was whether there was any difference proved. The evidence was practically to the effect that the dishorning performed by the accused was as close the skull as possible, that it took away part of the skull, and that the operation caused more pain than was necessary to the animal—that it was not "with as little pain as possible to the animal." The whole evidence against the accused, as to the operation causing unnecessary pain, consisted in assuming if the cut had not been as close to the skull as it was there would not have been so much pain. The decision of the High Court tolerated close dishorning, and what was tolerated as close dishorning was not of the kind which might be characterised as dishorning two or three inches away, or cutting the horn through the middle, but cutting the horn as close to the skull as possible. Between the facts in that case, and the facts in the present case, so far as the operations on 21st Sept. and 5th Oct. were concerned, there was no difference in the way the thing was They had the evidence of three witnesses who knew the facts—Mr. Bell, Mr. Clark, and Mr. Wilson—and that went to show that the operation was done in both cases in exactly the same way. What, then, was the difference between the two cases? The only difference was that two of the animals died. He supposed that was what called attention to the matter. That that should happen a fortnight after an operation of that kind would not prove cruelty in the carrying of it out—at least, not necessarily. As to the death of the two auimals, what was the cause of that? Could it be traced to the way in which the operation was done, or to cruelty or gross carelessness in the doing of it, or was it done by a skilful man doing his best. In the latter case it was not cruelty, though the operation failed. If every operation that resulted in death were to be criminal operations, there were very few surgeons who would be safe for long. Fatal issues resulted from all operations. But how could they account for the death of these cattle? All the veterinary surgeons agreed, and the probability was, that their deaths were due to inflammation of the membrane of the brain, induced probably by maggots or by cold. That could not necessarily be due to any cruelty in the operation. It might have been due to maltreatment afterwards—that was to say, neglect; but in point of law neglect was one thing and cruelty another. A person might neglect to send for a doctor or neglect to do what was necessary in certain circumstances, but that would not involve cruelty and would not involve any positive crime. The Plymouth Brethren and some others who had religious views against being doctored, did not send for a physician, but it did not, as a rule, hold——

The FISCAL—They have been prosecuted lately in England.

The SHERIFF—But not in Scotland.

The FISCAL: We have but few of them here.

The SHERIFF: There are none. At all events, it was said that their death occurred through neglect, but that did not make the matter criminal. To do so the neglect required to be of a culpable and inexcusable character. Assuming this to be a relative charge, he asked what could Mr. Swan have done to avoid its occurrence. He sent the beasts out to a park after operating upon them. They stayed there eight or nine days, and while there they did not seem to have had anything wrong with them. The only suspicious looking feature in the whole case was that before he sent them off on their journey he took them into the court and there anointed them with Macdonald's sheep dip or something else. That seemed to show that they were not very right, or that he did this as a precaution. If this was done as a precaution the surprising thing was why he should not have kept them a little while longer.

This action only indicated that the animals were not perfectly right, With regard to the maggots, his Lordship had a strong conviction that the blue flies got on the sore places of the cattle while they were at Balhungie. The whole history of the breakdown of the cattle seemed to point to the fact that the animals were in an unhealthy state before they were operated upon. A little better care might have been taken of them, but want of care never could, according to his idea, be elevated to cruelty. Lord Young had stated in a similar case that the owner of cattle was, of all persons in the world, the man who had the chief interest in and the chief motive to look after them, and to take care of his own property. He could have no motive to neglect them. The cruelty suggested was altogether different from the cruelty of a man who beat his beast, and was careless and callous, and made it work when it was not able. All it rose to was want of prudence and thoughtlessness in sending away the cattle. The whole history of the matter went to show that Mr. Swan thought he was doing his best, and that he was not doing anything wrong or anything that was prejudicial to his interest. In the whole circumstances, he was to say without hesitation that the charges were not established.

The FISCAL: Does your Lordship say not guilty or not proven.

The SHERIFF: In the circumstances not guilty. His Lordship further remarked that he did not wish it to be understood that the skilled evidence as to precautions being taken had not a sound basis in physiology and common sense. It would be well for the farmers of the district to take into consideration that there were precautions that could be used in such cases, and in the circumstances it was well worth having the opinion of Professor Reid and Principal Dewar in regard to the matter. Whatever their expenses might be he had not a shadow of doubt that their physiology was correct, and that the same law of health that applied to man applied to animals, although perhaps not in such a very strong degree.

Mr. Dickie moved for expenses. The Fiscal opposed the motion, and the Sheriff refused to grant it, pointing out that before he could do so it would have had to be shown that the prosecution had been without probable cause.

The Court rose at 8.35, having sat for nine and a half hours.

Army Veterinary Department.

Veterinary-Lieutenant-Colonel A. E. Queripel is granted the temporary rank of Veterinary-Colonel whilst employed as Inspector-General, Civil Veterinary Department, in India.

Veterinary-Lieutenant G. K. Walker embarked on the 12th instant for a tour of service in India.

The Staff appointments at home and in the colonies which become vacant in 1896 are:—

Veterinary-Lieutenant-Colonel W. A. Russell, January 6th. Veterinary-Lieutenant-Colonel G. A. Oliphant, January 26th. Veterinary-Major W. Walker, May 29th. Veterinary-Major J. Hammond, December 9th.

Veterinary-Lieutenant-Colonel R. Poyser, Inspecting Veterinary Officer, Punjab Army, had rejoined at Murree from leave when the mail left India. Veterinary-Major J. W. Evans, who has held the officiating appointment since March last, on being relieved, proceeded to Kirkee for duty. Veterinary-Captain E. Taylor has been posted to the charge of the Army Veterinary School at Poona, and has left Rawul Pindi to take up his new duties in the Bombay Presidency. His place at Rawul Pindi has been taken by Veterinary-Lieutenant C. Rose, who has come down from the Tochi Valley. He has been in Waziristan since December last.—*Army and Navy Gazette.*

Notes and News.

ROYAL VETERINARY COLLEGE FOR IRELAND.—FIRST MEETING OF GOVERNORS.—The first meeting of the Governors named in the Charter for the above was held in the Royal Dublin Society's House, Kildare Street, yesterday.

There were present :—Professor Ambrose Bermingham, Professor Thomas Carroll, Professor D. J. Cunningham, W. Field, Esq., M.P.; Rev. Dr. Haughton, T. D. Lambert, F.R.C.V.S.; Sir Christopher Nixon, M.D.; Sir W. Thornley Stoker, M.D.; Joseph P. O'Reilly, Esq., J.P.; Rev. Francis Tobin, F.R.S.; Lieutenant-Colonel Clayton, A.V.D., Ireland, Governors nominated by the Crown; the Hon. Judge Boyd, Sir Thomas P. Butler, Bart.; Sir Charles A. Cameron, Colonel Gerald R. Dease, Robert Fowler, Esq., D.L.; John Freeman, F.R.C.V.S.; Professor W. N. Hartley, F.R.S.; Professor Emerson Reynolds, F.R.S., Governors nominated by the Royal Dublin Society; Professor George Francis Fitzgerald, F.T.C.D., one of the Governors nominated by the Commissioners of National Education.

The Hon. Judge Boyd was requested to take the chair.

The Charter of the Royal Veterinary College of Ireland was handed, by Sir Christopher Nixon, to the Chairman, who explained its provisions. It was laid upon the table and accepted by the Governors.

Sir Christopher Nixou explained the steps that were taken to found the Veterinary College, and gave an account of the present position of the undertaking.

Judge Boyd the explained that it was necessary to appoint honorary officers and an executive committee, and on the motion of Professor Cunningham, seconded by Sir Christopher Nixon, Mr. Thomas Carroll was requested to act as honorary secretary to the meeting.

On the motion of Colonel Dease, seconded by Professor Fitzgerald, the following were unanimously elected to fill the undermentioned offices :—

President—Sir Christopher Nixon, M.D.

Vice-Presidents—Prof. Cunningham, D.C.L., Oxon, F.R.S.; William Field, Esq., M.P.; Robert Fowler, D.L., J.P.; Rev. Dr. Haughton, M.D., F.R.S.; Rt. Rev. Monsignor Gerald Molloy, D.D.; Sir Thornley Stoker, M.D.

Proposed by Professor Fitzgerald, seconded by Mr. T. D. Lambert—That Sir Charles Cameron, M.D., be asked to act as Treasurer. Passed unanimously.

It was proposed by Mr. Field, M.P., seconded by Sir Thornley Stoker :—"That the following be named as Executive Committee of the Board of Governors :—The President and Vice-Presidents and Honorary Secretary of the Board of Governors, Professor Ambrose Bermingham, M.D.; Sir Thos. P. Butler, Bart., D.L., J.P.; Professor Thomas Carroll, M.R.I A.; Professor D. J. Cunningham, M.D., F.R.S.; Lieut.-Col. Clayton, F.R.C.V.S., A.V.D.; Prof. George F. Fitzgerald F.T.C.D., F.R.S.; J. Freeman, F.R.C.V.S.; Matthew Hedley, F.R.C.V.S.; T. D. Lambert, F.R.C.V.S.; W. Pallin, F.R.C.V.S.; Jas. Talbot Power, D.L., J.P.

Proposed by Professor D. J. Cunningham, seconded by Mr. T. D. Lambert, and carried unanimously : — "That Veterinary-Captain A. J. Haslam, A.V.D., be asked to accept the office of Honorary Secretary to the Board of Governors."

Several gentlemen present spoke in high terms of Veterinary-Captain Haslam's energy, and generally a hope was expressed that he would be able to take the office of honorary secretary.

Proposed by Judge Boyd and seconded by Dr. Haughton :—"That the following form a deputation to wait upon the Chief Secretary to the Lord Lieu-

tenant with the purpose of enlisting his aid in obtaining the grant promised to the College."

The Honorary Secretary read the statement of accounts, which were passed.

The following is Mr. Morley's letter:—

"Irish Office, Westminster, S.W.,
"February 19th, 1894.

"Dear Mr. Nixon—I have given full consideration to the views of the influential deputation that waited on me in Dublin on the 30th ult., to advocate the establishment of a Veterinary School of Medicine in Ireland. I am now happy to be in a position to announce that the Government will be prepared to ask Parliament to authorise the allocation of a lump sum of fifteen thousand pounds as a grant in aid towards the cost of acquiring suitable college buildings and fittings. The necessary steps will be taken upon the Government being satisfied that the initial proceedings are so far matured as to justify the advance. We wish the project every success as being calculated in a marked way to promote a highly important public object.—Yours faithfully,

"C. J. Nixon, Esq." "JOHN MORLEY."

The proceedings terminated with a hearty vote of thanks to Sir Christopher Nixon, Professor Fitzgerald, Professor Cunningham and Professor Carroll for the trouble taken to bring the project to its present promising condition.

EDINBURGH NEW VETERINARY COLLEGE.—The following students of the New Veterinary College, Edinburgh, have passed their examinations before the Examining Board of the Royal College of Veterinary Surgeons in December:—First Professional Examination—D. M'Donald, Ross-shire; C. R. Twist, Birmingham; W. F. Wilson, Preston. Second Professional Examination—A. P. Beesley, Lancaster; J. D. Knowles, Wigan; J. H. Lomas, Manchester; A. Lawrie, Belfast; M. J. Mitchell, Limerick; A. J. O'Leary, Limerick; R. W. Williams, Aberystwith; R. J. Bailey, Bury; H. H. Ferguson, Warrington. Final Examination—T. Bowlas, Blackpool; W. Broomhead, Shefheld; A. Ferens, Durham; J. De Ville, Ashbourne; J. Hardie, York; R. Knight, Bolton; R. Rawlins, Chesterfield; R. J. Murnane, Limerick (theoretical portion): A. O. Hughes, St. Asaph; J. M'Phail, Edinburgh; J. Allen, Derby. At the same examinations of the Royal College of Veterinary Surgeons, the following passed the second professional with honours—Messrs. J. D. Knowles, first-class honours; A. P. Beesley, J. H. Lomas, R. D. Williams, and H. H. Ferguson, second-class honours.

WESTMINSTER, S.W.—The office of the Royal Commission on Horse-breeding has been removed from No. 15, Great George Street, to No. 22.

GLASGOW VETERINARY COLLEGE.—The following students passed the A or First Professional examination:—

E. Soutar, Forfar; A. M. Spittal, Pollokshields; John Baird, East Kilbride; J. P. Small, Kilkeel, County Down.

The following students passed the B or Second Professional Examination:—

H. G. Simpson, Windsor (honours); D. Jack, Helensburgh (honours); James Reynard, Kirkintilloch; Earnest Jenkins, Cardiff; James M'Intyre, Port-Glasgow; J. Crawford, Beith; D. Walker, Rothesay; W. Crawford, Beith; Wm. Kilpatrick, Belfast; A. Fraser, Largs; H. O'Neil, Scarborough (honours).

The following students passed the first (or theoretical) part of the Final Examination:—

Gladstone Mayall Mossley, Manchester; J. Watson, Shettleston; J. M. Stirling, Kippen; W. M'Kenzie, Market Drayton; A. S. Adams, Glasgow; James Paton, Perth.

The following gentlemen passed the second (or practical) part of the Final

Examination, and received the diplomas of the Royal College of Veterinary Surgeons :—

Gladstone Mayall Mossley, Manchester; J. M. Stirling, Kippen; A. S. Adams, Glasgow; J. Paton, Perth; D. Wyllie, Stewarton.

THE DOG IN BELGIUM.—An agitation is being fomented in Belgium for the improvement of the lot of the dog, which, as is well known, is universally employed there in drawing barrows and small carts about the streets. In Brussels alone over 10,000 dogs are so engaged, and the total number of draught dogs in the whole country is probably not less than 50,000. Generations of servitude have made the Belgian dog a race apart. For his size he is said to possess the greatest pulling power of any animal, four times his own weight being considered a load well within his power. Taking his average weight as half-a-hundredweight, this means that something like 5,000 tons are daily dragged about by canine labour in Belgium. The economic importance of the Belgian dog has caused the Royal Society for the Protection of Animals to undertake an agitation for the amelioration of his lot. It is urged that the animals are frequently overloaded and often cruelly treated, and that in many cases they are given no opportunity for resting when the cart or barrow is not actually in motion. Among the reforms demanded are (1) the abolition of the whip, and severe penalties against the practice of kicking tired-out dogs; (2) the raising of the minimum shoulder height for dogs of burden from 20 to 22 inches; (3) a penalty against drunkenness when in charge, and against the employment of children as drivers; and (4) the compulsory arrangement of harness and shafts, so as to permit the animals to lie down when the vehicle is at rest.—*St. James's Gazette.*

POISONOUS HORSE-PEAS.—At the annual meeting of the South Staffordshire and East Worcestershire Mining Engineers, Mr. F. Meachem read a paper on "Lathyrus-poisoning among the Horses at Hamstead Colliery." He said that some time ago, owing to the high price of horse-feed, they decided to use peas in place of oats or beans, and this they continued for twelve months without any ill effects. Early in November last, however, it was noticed that some of the horses seemed to be getting "thick in the wind," and after running a few journeys they would pant and stretch out their necks in their efforts to gain breath. The attention of the veterinary surgeon was directed to them, but he could offer no explanation. The horses became rapidly worse, and towards the middle of the month one died, six others were badly affected, and three died four days afterwards. When the horses died a sample of the food was sent to Professor W. Williams, of the New Veterinary College, Edinburgh, and he wrote that he detected the poisonous pea, or vetch, *Lathyrus sativus*, among the food. In all twelve horses died, and on others that had eaten the poisonous vetch, and which showed symptoms of poisoning, the operation of tracheotomy was performed. This gave them relief, but though they recovered they were permanently injured. The pea came from various places, and was of a variety of colours. As with men, so with horses; the lathyrus was a cumulative poison, the symptoms of poison showing themselves the sooner the greater the proportion of seeds in the horse's food. The Great Western Railway Company had lost twenty-four horses from the same cause, and there were many losses by other companies.

NORTH-RIDING POLICE COURT.—Before Capt. the Hon. Francis Johnstone (in the chair), the ex-Mayor (Mr. G. L. Beeforth), Colonel Kendall, and Mr. J. Dale.—A False Veterinary Surgeon.—William Newton, Ayton, was summoned for having described himself as a veterinary surgeon contrary to the Veterinary Surgeons Act of 1881.—The defendant stated that he held a certificate which, unfortunately, he had misplaced, but which he thought he

could produce if time were given him. The magistrates on this ground adjourned the case.—As there was only one magistrate on the Bench who was present last week, Mr. G. E. Royle, who appeared to prosecute in the interests of the Royal College of Veterinary Surgeons briefly re-stated the facts.—The Chairman, in imposing a fine of £1, including, costs, said that defendant ought to have removed the brass plate containing the words, "Veterinary Surgeon" from his door after the decision in the Hunmanby case.—The defendant expressed his intention of taking down the plate.—*Scarborough Evening News*, 31*st October*, 1895.

Extracts from Foreign Journals.

A BAROMETRICAL MARE.

THE following notice is contributed by Monsieur D. Bonnigal, veterinary surgeon, at Vendôme, to the *Recueil de Médecine Vétérinaire* of 15th November:—"Observations on intermittent lameness caused by arterial lesions are not very uncommon, but I doubt if any surgeon has had the opportunity of studying a case of the kind so long as I, or in a greater variety of conditions. I therefore give the following details: In 1888 I bought a half-bred mare, seven years old, which had been broken to the saddle. During the summer months I used her both for the saddle and in harness, but never noticed anything abnormal in her action; on the contrary, I found her very active and swift-footed. In the beginning of autumn, the weather being rainy, I had one day to pass through half a mile of very miry road, which greatly distressed the mare. Next day, before she had gone a couple of miles, she began to limp on the off hind-leg, and a few minutes afterwards she was, practically, running on three legs. I then allowed her to walk and after a few minutes of this the lameness disappeared, only to re-appear sooner or later according to her rate of motion. From this time onwards I noticed that the limping, which never existed at our departure from home, always re-appeared either on the outward or the homeward journey, and finally I noticed that the mare hardly ever limped except when facing the wind. I summarised my observations, taken during five years of excellent service, as follows: (1) the mare limped only when running against the wind or when entering a valley filled with mist; (2) if she limped apart from these conditions, I had a sure prognostication of the approach of rainy weather; (3) if, immediately after rain, the limping was slow to appear in face of the wind, I was sure that good weather was coming; (4) prolonged rest prevented or retarded, according as the weather was good or bad, the return of the lameness or diminished its severity; (5) when the mare had got heated in a long run, the lameness re-appeared only after a pretty long stoppage; if there was no stoppage, I might ride or drive her a very long way without being obliged to put her to the walk; (6) year by year, the conditions remaining the same, the lameness became more serious and of more frequent occurrence, but did not prevent me from making use of the animal.

I had in this case to do with arteritis affecting the right external iliac artery, or one of its divisions. I need not detail the local symptoms, well known to all surgeons, nor to the possibility of a palliative treatment, which I did not attempt. The only importance which I attach to the facts observed by me, is in reference to the question of intermittent lameness, whether it is always possible to detect this lameness, and whether it ought to be treated as a

blemish that annuls a sale. I had a case in point some years ago, and it was as follows :—A brother surgeon had examined an old mare, and had found her suffering from a lameness which he considered so serious as to annul the sale of the animal. Some months after this examination by my *confrère* the mare was brought back—I forget by what legal process—to Vendôme where she had been originally sold, and she was submitted to the examination of three experts, of whom I was one. We examined the mare most carefully and conscientiously but could find no trace of lameness, and we gave our verdict accordingly. This happened before my experience with the barometrical mare, and I have thought since that the first surgeon may have been right and that we three Vendôme surgeons possibly examined the animal just at a time when such intermittent affections as I have described can best dissemble themselves. It is, I think, important to establish the fact that lameness caused by arteritis is not of a serious nature, and may show itself only in the face of a strong wind or in an atmosphere laden with moisture. Experts will therefore do well to test it under these conditions before giving a definite opinion.

Reviews.

THE OX: ITS EXTERNAL AND INTERNAL ORGANISATION. By A. SEYFFERTH. Revised and edited by PROFESSOR G. T. BROWN, C.B. 3s. 6d. (George Philip and Son, London.)

This is the latest addition to Philip's anatomical models, and is a production similar to the one on the horse published some little time ago and edited by Dr. Fleming. The editor, in his preface, indicates the proposed function of the work when he says that it "will be instructive to the owner of stock, who may find a new interest in learning something of the anatomy of the animals which are constantly under his observation; while the student, and possibly the experienced veterinarian, may amuse a leisure hour in refreshing his memory of structure—a knowledge of which was formerly gained by arduous work in the dissecting-room."

The introductory section is occupied by a brief sketch of the past history of the ox tribe. We are told that "the origin of our domestic cattle can be traced principally back to three different races of wild species—first, the primeval ox (bos primigensis), which must probably be considered as identical with the ure ox; secondly, the long-forehead ox (bos longifrons); and thirdly, the broad-forehead ox (bos frontosus), relics of which have been found and dug up in pile dwellings and bogs in various parts of Europe." A short account of the existing species of European and other cattle follows.

A chapter on dentition is illustrated with woodcuts which have already made their appearance in Professor Brown's small work on the dentition of farm animals.

The rest of the letterpress will probably not appeal to any but the lay reader, as the description of organs is very brief, and couched in as simple language as possible; in fact, there seems to be, in some places, an almost undue straining after simplicity of terms, with a result that will hardly commend itself to the scientific mind. We notice also numerous errors, which can scarcely be other than due to the printer, and which, undoubtedly, will be corrected in a second edition.

For the last part of the work, we have nothing but praise. This section consists of a number of superimposed and removable models illustrative of the external and internal conformation of the ox; and it is this porton of the

book that we commend to the notice of those of our readers who are desirous of acquiring, or refreshing, a knowledge of the topographical anatomy of the most important of farm animals.

There is one suggestion we should like to make to the publishers, and that is that the models in the next edition be mounted on calico, as on their present ground they are scarcely fitted for any but the most careful handling.

We have received for review an elementary veterinary manual written by our well-known friend, Mr. Harry Thompson, of Aspatria. This is a book which will be of undoubted value to students attending agricultural institutions, and is one which should be of value to men who purpose going abroad and who may perhaps be a score or two of miles away from any skilled person.

Elementary Lectures on Veterinary Science. Whitehaven: T. Brackenridge & Co.

Spratt's Patent, Bermondsey, have been good enough to forward us their Almanack for 1896 and inform us that any of our readers forwarding one penny stamp can obtain a copy of the same. It is about the best pennyworth that we have ever had.

We are very pleased to learn that the United Horse Shoe and Nail, Co., Ltd., Cubitt Town, E., have again gained a Gold Medal for the excellence of the articles they turn out.

We have received for review the second edition of Veterinary Obstetrics by Fleming, but owing to its importance are unable to review it this month. It is published by Baillière, Tindall & Cox, 20, King William Street, Strand.

Errata in December Number:—

Page 455, line 13 from bottom, *read* 0·1 gramme Eserine and not 1 gramme; eight lines from bottom, for 5 grammes Chloride of Barium, read 0·5 gramme; also page 395, line 10, last word on line, for "almost" read "almost always;" page 426, 14 lines from top, for "purgatories" *read* "purgatives."

Communications, Books, Journals, etc., Received.

Recueil de Médecine Veterinaire (Alfort); La Presse Veterinaire (Paris); L'Echo Veterinaire (Liege); Annales de Médecine Veterinaire (Brussels); Oesterreichische Monatsschrift für Thierheilkunde (Vienna: M. Perles); La Revista Veterinaria (Buenos Aires); Berliner Thierärztliche Wochenschrift (Berlin: Richard Schoetz); American Veterinary Review; The Journal of Comparative Medicine and Veterinary Archives; Investigations concerning Infectious Diseases among Poultry; Buchhandlung für Medicin und Naturwissens; Joshua A. Nunn, F.R.C.V.S., C.I.E., D.S.O., Veterinary-Captain, A.V.D., Principal Lahore Veterinary College; East Cumberland News, The City Press; Bulletin of The Johns Hopkins Hospital; Modern Medicine and Bacteriological Review; Fleming's Obstetrics; Veterinary Department, Dublin Castle; T. B. Goodall, Esq.; The Evening Herald, Elementary Veterinary Manual for the use of Officers attending Veterinary Classes; Pathologie interne des Animaux Domestiques, par C. Cadeac, Lyons Veterinary School; Elementary Veterinary Manual, by Surgeon-Captain Bruce Seton, Indian Medical Service; Agricultural Journal of Cape Colony; The Wynberg Times; North British Agriculturist.